FEDERAL ITEM IDENTIFICATION GUIDE

RESISTORS, FIXED AND ADJUSTABLE

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Commander

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BY ORDER OF THE DIRECTOR

/s/

Commander

Defense Logistics Information Service

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GENERAL INFORMATION

1. Purpose and Scope

This Federal Item Identification Guide (FIIG) is a self-contained document for the collection, coding, transmittal, and retrieval of item characteristics and related supply management data for an item of supply for logistical use. This FIIG is to be used to describe items of supply identified by the index of approved item names appearing in this section.

2. Contents

This FIIG is comprised of the following:

Index of Approved Item Names Covered by this FIIG
Applicability Key Index
Section I - Item Characteristics Data Requirements
Section III - New text that should be here.
Appendix A - Reply Tables
Appendix B - Reference Drawing Groups (as applicable)
Appendix C - Technical Data Tables (as applicable)

a. Index of Approved Item Names Covered by this FIIG:

The index lists the approved item names with definitions and item name codes as they appear in Cataloging Handbook H6, applicable to this FIIG. In addition, each name entry is assigned an applicability key for use in relating the characteristics requirements in Section I to the specific item name.

b. Applicability Key Index:

The purpose of this index is to provide the user with a ready reference for determining the specific requirements which are applicable to a given approved item name. This index lists all requirements in sequence as they appear in the FIIG. The applicability of a Master Requirement Coded requirement is indicated by the column headed by the specific item name applicability key as follows:

(1) The letter "X" indicates the requirement must be answered for a full descriptive item.

(2) The letters "AR" indicate the requirement is to be answered as required by (1) instructional notes within the FIIG; (2) when the reply is predicated on replies to a related main requirement; or (3) when an asterisk (*) is used in conjunction with the applicability key column in Section I.

(3) A blank in the column indicates the requirement is not applicable to the specific item name.

c. Section I - Item Characteristics Data Requirements:

This section contains the physical and performance characteristics requirements needed to describe and identify an item of supply. These characteristics differentiate one item from all other items of supply and are to be used to meet the needs of all supported functions. This section is arranged in columns. Identification of each column and instructions pertinent thereto are as follows:

(1) Applicability Key:

The first column shows the applicability key(s) for each requirement. It indicates whether the requirement need be satisfied for the item being identified. "ALL" indicates that the requirement must be answered for all items covered by the FIIG. One or more alphabetic character(s) or group of one or more alphabetic characters indicates a response is required when describing items with an approved item name or names represented by the key(s). An asterisk (*) used in conjunction with any applicability key indicates that the characteristic stated in the requirement may not be applicable to all items covered by the FIIG.

(2) Master Requirement Codes (MRC):

A four-position code which is assigned to a FIIG requirement for identification of the requirement, cross-referencing requirements in the various sections and appendices of the FIIG, and for mechanized processing and retrieval of FIIG generated data. Absence of a MRC for a requirement indicates a lead-in to requirements with individual MRCs in Appendix B.

(a) The coding technique for providing MULTIPLE/OPTIONAL responses will not be used for a Section I requirement assigned Mode Code A or L that leads to Appendix B sketches with dimensional requirements.

(b) Identified Secondary Address Coding:

This technique is for extending the Master Requirement Code so that a unique address is provided for each application of the requirement in relation to the item and is authorized only as instructed within the requirement. Responses coded through this technique will always consist of the following: (1) Master Requirement Codes, (2) indicator code (a single numeric character determined by the number of positions contained), (3) identified secondary address code (1 to 3-digit alphabetic codes determined by the number of predicted replies), (4) the mode code, (5) the reply code and/or clear text response, and (6) end with a record separator (*). Steps (1) through (6) are repeated for each application of the requirement.

(c) AND/OR coding:

A technique for extending the Master Requirement Code to provide a distinctive address for multiple responses to the same requirement. Responses coded through this technique will always consist of (1) Master Requirement Code, (2) mode code, (3) the response or reply code (as instructed by the requirement), (4) a single dollar sign ($) for an OR condition, or a double dollar sign ($$) for an AND condition, (5) the mode code, (6) the response or reply code

(followed by conditions (4) through (6) for each of the multiple responses) and (7) end with a record separator (*). NOTE: Apply this technique only when instructed by the requirement sample reply (e.g.).

(3) Mode Code:

A one-position alphabetic code that specifies the manner in which a response will be prepared. Each requirement assigned a MRC is also assigned a mode code. Sample replies follow each FIIG requirement displaying the proper construction of a response for the assigned mode code. The response to a requirement will always be prepared in accordance with the assigned mode code and sample reply except in the following instances:

(a) Use of E Mode Code replies is not authorized. If a reply needed to describe an item is not listed in the applicable table, contact the FIIG Initiator.

(b) Mode Code K may not be used for any requirement unless instructed by the requirement instructions.

(4) Requirement:

This portion includes the characteristics data elements and data use identifiers required to identify and differentiate one item of supply from another, narrative definitions, and explanations as to use and method of expression. Instructions for coding and preparing replies are also provided.

(5) Reply Code:

A code that represents an established authorized reply to a requirement.

d. Section III - Supplementary Technical and Supply Management Data:

This section includes those characteristics requirements necessary to support specific logistics functions other than National Stock Number assignment.

e. Appendix A - Reply Tables:

Tables of authorized replies to requirements and reply codes when the tables are too lengthy for inclusion in Section I/III, when applicable.

f. Appendix B - Reference Drawings:

This appendix contains representative illustrations which portray specific variations of one or more generic characteristics. If reference drawings contain requirements pages to be used in conjunction with illustrations for dimensioning purposes, the requirements pages will contain Master Requirement Codes, mode codes, and a statement of the requirement. A response to requirements on a requirements page is necessary only for those Master Requirement Codes applicable to the illustration selected.

g. Appendix C - Technical Data Tables:

This appendix contains conversion charts and similar data pertinent to the requirements in Section I/III, when applicable.

3. Enter administrative MRC CLQL immediately following the last FIIG requirement reply, as instructed below:

MRC	Mode Code	Requirement	Example
CLQL	G	COLLOQUIAL NAME (common usage name by which an item is known)	CLQLGWOVEN WIRE CLOTH*

4. Special Instructions and Indicator Definitions

a. Measurements:

Unless otherwise indicated within a requirement example, enter all measurements in decimal form, carried to the nearest three decimal places, with a minimum of one digit preceding the decimal. For SI (metric), enter all measurements with a minimum of one digit before and after the decimal. For fraction to decimal conversion, see Appendix C.

b. Indicators:

A cross hatch (#) following an AIN, MRC, Reply Code or Drawing Number indicates for "ALL EXCEPT USA" use only.

5. Indexes

a. Index of Data Requirements

This index is arranged in alphabetic sequence by Master Requirement Code, cross-referenced to the applicable data requirement and page number(s).

b. Index of Approved Item Names

This index is arranged in alphabetic sequence referenced to Applicability Key.

c. Applicability Key Index

This index is arranged in Applicability Key Sequence.

6. Maintenance

Requests for revisions and other changes will be directed to:

Index of Master Requirement Codes

INDEX OF APPROVED ITEM NAMES COVERED BY THIS FIIG

Approved Item Name	INC	App Key

Resistor

1. (Electrical) A device, the primary purpose of which is to introduce opposition to the flow of current in an electrical circuit.

RESISTOR (1), ADJUSTABLE	00009	A

A resistor whose overall ohmic value is fixed, in addition, it has one or more movable terminals which are designed to be set and fixed prior to use, to include any desired value of resistance within the range of the complete resistor. The opposition to the flow of current is an inherent property of the material used and is manifest in the heat dissipated in the item itself.

RESISTOR (1), CHIP, FIXED, FILM	67164	D

A resistor whose ohmic value cannot be adjusted or varied. The resistor element consists of either a thin layer or conductive material, containing neither binders or insulating materials, deposited on an insulated form, or an alloy of metal and ceramic materials, usually fused to an insulted form. Opposition to the flow of current is an inherent property of the materials used and is manifest by the heat dissipation in the resistor. Primarily intended for incorporation into microelectronic circuits and surface mounted applications.

RESISTOR (1), FIXED, COMPOSITION	00126	C

A resistor whose ohmic value cannot be adjusted or varied. The resistance element consists of a mixture of carbon, an insulating material, and suitable binders, either molded together or applied as a thin layer of conducting material on an insulated form. The opposition to the flow of current is an inherent property of the materials used and is manifest by the heat dissipation in the item itself. See also ATTENUATOR, FIXED; RESISTOR, FIXED, FILM; and RESISTOR, THERMAL. Excludes SUPPRESSOR, IGNITION INTERFERENCE.

RESISTOR (1), FIXED, FILM	05311	D

A resistor whose ohmic value cannot be adjusted or varied. The resistance element consists of either a thin layer of conductive material, containing either binders or insulating materials, deposited on an insulated form; or an alloy of metal and ceramic materials, usually fused to an insulated form. Opposition to the flow of current is an inherent property of the materials used and is manifest by the heat dissipation in the resistor. See also ATTENUATOR, FIXED and RESISTOR, FIXED, COMPOSITION. Excludes carbon composition type resistors.

RESISTOR (1), FIXED, WIRE WOUND	00010	B

A resistor whose ohmic value cannot be adjusted or varied. The resistance element consists of high resistance wire (or ribbon) either wound on an insulated form or constructed so as to be self supporting. Opposition to the flow of current is an inherent property of the resistance wire and is manifest by the heat dissipation in the resistor. Excludes SUPPRESSOR, IGNITION INTERFERENCE.

Approved Item Name	INC	App Key
RESISTOR (1), FIXED, WIRE WOUND, INDUCTIVE	37403	B

A resistor whose ohmic value cannot be adjusted or varied. The resistance element consists of high resistance wire (or ribbon) either wound on an insulated form or constructed so as to be self-supporting. The item must have inherent characteristics of inducing self-inductance. Opposition to current flow is an inherent property of the resistance wire and is manifested by the heat dissipation in the resistor. Excludes SUPPRESSOR, IGNITION INTERFERENCE. See also RESISTOR (1), FIXED, WIREWOUND, NONINDUCTIVE.

RESISTOR (1), FIXED, WIRE WOUND, NONINDUCTIVE	37404	B

A resistor whose ohmic value cannot be adjusted or varied. The resistance element consists of high resistance wire (or ribbon) either wound on an insulated form or constructed so as to be self-supporting. The items must have inherent characteristics of inducing little or no self-inductance. Opposition to current flow is an inherent property of the resistance wire and is manifested by the heat dissipation in the resistor. Excludes SUPPRESSOR, IGNITION INTERFERENCE. See also RESISTOR (1), FIXED, WIRE WOUND, INDUCTIVE.

RESISTOR NETWORK, FIXED, FILM	32068	E

An arrangement of multiple fixed resistive elements or discrete resistors permanently encased, encapsulated, or potted together, to form an inseparable unit. The resistive elements, consisting of a thin layer of conductive material deposited on or fused to an insulating base, usually are electrically connected to each other and may be arranged in any circuit configuration. Excludes RESISTOR, FIXED (as modified); RESISTOR ASSEMBLY; RESISTOR NETWORK, FIXED-VARIABLE; and RESISTOR SET, MATCHED.

RESISTOR NETWORK, FIXED, WIREWOUND	32069	E

An arrangement of multiple fixed resistive elements or discrete resistors permanently encased, encapsulated, or potted together, to form an inseparable unit. The resistive elements, consisting of high resistance wire (or ribbon), usually are electrically connected to each other and may be arranged in any circuit configuration. Excludes RESISTOR, FIXED (as modified); RESISTOR ASSEMBLY; RESISTOR NETWORK, FIXED-VARIABLE; and RESISTOR SET, MATCHED.

APPLICABILITY KEY INDEX

	A	B	C	D	E
NAME	X	X	X	X	X
AAPP	X	X	X	X	X
CQRD					X
AAPQ	X	X	X	X	X
AAPR		AR			
CQFK		AR			
CQFD		AR			
AEFB	X	X	X	X	X
AAQF	X	X	X	X	X
AAQG	X	X	X	X	X
AAPE	AR	AR		AR	AR
AAQH	AR	AR		AR	AR
AEBZ					AR
AAQZ	X	X	X	X	X
STYL	X	X	X	X	X
ABPM	AR	AR	AR	AR	AR
ADAG	AR	AR	AR	AR	AR
ADAP	AR	AR	AR	AR	AR
ADAQ	AR	AR	AR	AR	AR
ADAT	AR	AR	AR	AR	AR
ADAU	AR	AR	AR	AR	AR
AEBY	AR	AR	AR	AR	AR
AEHA	AR	AR	AR	AR	AR
AFYE	AR	AR	AR	AR	AR
BYML	AR	AR	AR	AR	AR
CQFG #	AR	AR	AR	AR	AR
CQGZ #	AR	AR	AR	AR	AR
CQHS #	AR	AR	AR	AR	AR
CQJK #	AR	AR	AR	AR	AR
CQKP #	AR	AR	AR	AR	AR
CQLB #	AR	AR	AR	AR	AR
AARB	X	X	X	X	X
AARF	AR	AR	AR	AR	AR
AARA					X
AARG	X	X	X	X	X
AARH	AR	AR	AR	AR	AR
AARE	X	X			
ABJT	AR	AR	AR	AR	AR
AFWW	AR	AR	AR	AR	AR
CBBL	AR	AR	AR	AR	AR
FEAT	AR	AR	AR	AR	AR
TEST	AR	AR	AR	AR	AR
SPCL	AR	AR	AR	AR	AR
ZZZK	AR	AR	AR	AR	AR
ZZZT	AR	AR	AR	AR	AR
ZZZW	AR	AR	AR	AR	AR
ZZZY	AR	AR	AR	AR	AR
CRTL	AR	AR	AR	AR	AR

PRPY	AR	AR	AR	AR	AR
ELRN	AR	AR	AR	AR	AR
NHCF	AR	AR	AR	AR	AR
AAPZ	AR	AR	AR	AR	AR
AAQA	AR	AR	AR	AR	AR
AAQB	AR	AR	AR	AR	AR
AAQC	AR	AR	AR	AR	AR
AAQD	AR	AR	AR	AR	AR
AAQE	AR	AR	AR	AR	AR
AGAV	AR	AR	AR	AR	AR
PMLC	AR	AR	AR	AR	AR
SUPP	AR	AR	AR	AR	AR
GRAC #	AR	AR	AR	AR	AR
CXCY	AR	AR	AR	AR	AR

SECTION I

APP Key	MRC	Mode Code	Requirements
ALL			
	NAME	D	ITEM NAME

Definition: A NOUN, WITH OR WITHOUT MODIFIERS, BY WHICH AN ITEM OF SUPPLY IS KNOWN.

Reply Instructions: Enter the applicable Item Name Code from the index appearing in the General Information Section. (e.g., NAMED05311*)

ALL			
	AAPP	J	ELECTRICAL RESISTANCE

Definition: A MEASURE OF THE OPPOSITION TO THE FLOW OF ELECTRICAL CURRENT.

Enter the applicable I/SAC from Appendix C, Table 10, followed by the Mode Code, the applicable Reply Code from the table below, and the numeric value. (e.g., AAPP1EJQ100.000*; AAPP1FJQ220.000*; AAPP1GJQ820.000*)

REPLY CODE	REPLY (AA57)
G	GIGOHMS
K	KILOHMS
M	MEGOHMS
Q	OHMS

APP Key	MRC	Mode Code	Requirements
E			
	CQRD	A	IDENTICAL VALUE RESISTOR QUANTITY

Definition: THE NUMBER OF RESISTORS OR RESISTOR ELEMENTS HAVING THE SAME RESISTANCE VALUE.

Reply Instructions: Enter the applicable I/SAC from Appendix C , Table 10, followed by the Mode Code and the quantity. (e.g.,

CQRD1AA7*

CQRD1BA3*

CQRD1CA1*

CQRD1DA6*)

ALL			
	AAPQ	F	RESISTANCE TOLERANCE IN PERCENT

Definition: THE LIMITS OF PERMISSIBLE VARIATION IN THE ELECTRICAL RESISTANCE VALUE OF AN ITEM FROM ITS RATED VALUE, EXPRESSED IN PERCENT.

Reply Instructions: Enter the applicable I/SAC from Appendix C , Table 10, followed by the Mode Code and the numeric values. (e.g., AAPQ1AFM0.500/P0.500*; AAPQ1BFM0.250/PO.500*; AAPQ1CFM0.500/PO.500*; AAPQ1DFM1.000/PO.500*)

Where the tolerance is given in ohms, convert to percentage as follows:

(Resistance tolerance (ohms) / Rated total resistance (ohms))X100.

APP Key	MRC	Mode Code	Requirements

B*

AAPR A FIXED TAP QUANTITY

Definition: THE NUMBER OF FIXED TERMINALS AT POINTS BETWEEN THE END TERMINALS THAT PROVIDE CONNECTION TO INTERMEDIATE VALUES OF THE TOTAL VALUE.

Reply Instructions: Enter the quantity. (e.g., AAPRA2*)

NOTE FOR MRCS CQFK AND CQFD: IF A REPLY IS ENTERED FOR MRC AAPR, REPLY TO MRCS CQFK AND CQFD.

B* (See Note Above)

CQFK D FIXED TAP TERMINAL TYPE

Definition: INDICATES THE TYPE OF TERMINAL(S) ON THE FIXED TAP(S) THAT IS PROVIDED FOR ELECTRICAL CONNECTION.

Reply Instructions: Enter the applicable Reply Code from Appendix A , Table 2. (e.g., CQFKDAU*; CQFKDAH$DAW*; CQFKDAU$$DAW*)

See Appendix B, Reference Drawing Group B, for illustrations of Terminal Types.

B* See Note Preceding MRC CQFK

CQFD J SECTION NOMINAL RESISTANCE

Definition: Definition: A MEASURE OF THE NOMINAL OPPOSITION TO THE FLOW OF ELECTRIC CURRENT THROUGH THE SECTION.

Reply Instructions: Enter the applicable Reply Code from Table 1, followed by Mode Code and the applicable Reply Code from Table 2 below, followed by the numeric value. (e.g., CQFD2BJQ900.000*; CQFD2AAJQ900.000*; CQFD2ABJK4.000*; CQFD2ACJK10.000*; CQFD2ADJM5.000*; CQFD2AEJM10.000*) For multiple replies, enter the end section having the lowest ohmic value first. See Appendix C , Table 7, for sequencing instructions.

REPLY CODE	REPLY (0025)
2BB	EACH SECTION
2BA	SINGLE SECTION
2AA	1ST SECTION
2AB	2ND SECTION
2AC	3RD SECTION
2AD	4TH SECTION

APP Key	MRC	Mode Code	Requirements
		2AE	5TH SECTION
		2AF	6TH SECTION
		2AG	7TH SECTION
		2AH	8TH SECTION
		2AJ	9TH SECTION
		2AK	10TH SECTION
		2AL	11TH SECTION
		2AM	12TH SECTION
		2AN	13TH SECTION
		2AP	14TH SECTION
		2AQ	15TH SECTION
		2 AR	16TH SECTION
		2AS	17TH SECTION
		2AT	18TH SECTION
		2AU	19TH SECTION
		2AV	20TH SECTION
		2AW	21ST SECTION
		2AX	22ND SECTION
		2AY	23RD SECTION
		2AZ	24TH SECTION

REPLY CODE	REPLY (AA57)
G	GIGOHMS
K	KILOHMS
M	MEGOHMS
Q	OHMS

ALL

AEFB J POWER DISSIPATION RATING IN WATTS

Definition: THE MAXIMUM AMOUNT OF ELECTRICAL ENERGY THAT CAN BE EXPENDED BY AN ITEM, EXPRESSED IN WATTS.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., AEFBJB0.125*)

For Applicability Keys A through D and F, if the item has a single power rating only, enter Reply Code B or C as applicable and the numeric value. (e.g., AEFBJB0.125*)

If the item has multiple power ratings, enter the rating established at the highest temperature given for full load (100\%) operation. If both "free air" and "heat sink" ratings are given, enter the "free air" rating.

APP Key	MRC	Mode Code	Requirements

For Applicability Key E, if the item has a single power rating only, enter Reply Code E or D as applicable and the numeric value. (e.g., AEFBJD1.000*)

If the item has power ratings for each resistor and for the total network, enter only the total network rating.

If the item has power ratings for each resistor only, enter the power ratings for each resistor of the network in the same sequence as required for MRC AAPP using AND coding ($$) to separate each rating. (e.g., AEFBJE1.250$$JE1.500$$JE2.000*)

For Applicability Keys A through F, for items which do not require a rating, change Mode Code to K and enter Reply Code N. (e.g., AEFBKN*)

REPLY CODE	REPLY (AC89)
E	EACH RESISTOR
B	FREE AIR
C	HEAT SINK
D	TOTAL NETWORK

ALL

AAQF	B	AMBIENT TEMP IN DEG CELSIUS AT FULL RATED POWER

Definition: THE AMBIENT TEMPERATURE OF THE MEDIUM SURROUNDING AN ITEM AT WHICH IT CAN BE OPERATED CONTINUOUSLY AT FULL RATED POWER, EXPRESSED IN DEGREES CELSIUS.

Reply Instructions: Enter the numeric value. Precede negative values with an M. (e.g., AAQFBM55.0*)

See Appendix C, Table 3, for temperature conversion.

For items that do not require a rating, change the Mode Code to K and enter Reply Code N. (e.g., AAQFKN*)

ALL

AAQG	B	AMBIENT TEMP IN DEG CELSIUS AT ZERO PERCENT RATED POWER

APP Key	MRC	Mode Code	Requirements

Definition: THE AMBIENT TEMPERATURE AT WHICH THE POWER DISSIPATION OF AN ITEM IS OPERATED TO ZERO PERCENT OF THE FULL RATED POWER, EXPRESSED IN DEGREES CELSIUS.

Reply Instructions: Enter the numeric value. (e.g., AAQGB125.0*)

See Appendix C, Table 3, for temperature conversion and Appendix C, Table 8, for typical derating chart.

For items that do not require a rating, change the Mode Code to K and enter Reply Code N. (e.g., AAQGKN*)

A*, B*, D*, E*

AAPE F TEMP COEFFICIENT OF RESISTANCE IN PPM PER DEG CELSIUS

Definition: A CONSTANT THAT REPRESENTS THE PROPORTIONATE CHANGE IN RESISTANCE CAUSED BY A CHANGE IN TEMPERATURE, EXPRESSED IN PARTS PER MILLION CHANGE PER DEGREE CELSIUS.

Reply Instructions: Enter the numeric values separated by a slash. Precede negative values with an M and positive values with a P. (e.g., AAPEFM300.0/P300.0*)

For a temperature coefficient expressed as a percent change of resistance per degree, convert to parts per million using the following formula:

PPM per degree C = percent change per degree x 10000

(i.e., to convert 0.02\% change per degree C, 0.02 x 10000 = 200.0 ppm)

For Applicability Key E, if temperature coefficient differs for specified parts of the total temperature range, enter all values using I/SAC from Appendix C, Table 11. (e.g.,

AAPE1AFM30.0/P30.0*

AAPE1BFM60.0/P60.0*)

APP Key	MRC	Mode Code	Requirements

When temperature coefficient is given as a single positive or a single negative value, such as not to exceed + 500 PPM, do not reply to this requirement and enter under MRC FEAT. (i.e., FEATGTEMP COEF NOT TO EXCEED PLUS 500 PPM*)

If a temperature characteristic of resistance is given with a temperature range instead of temperature coefficient, see Appendix C, Table 4, for conversion.

A*, B*, D*, E*

AAQH F TEMP RANGE OF TEMP COEFFICIENT IN DEG CELSIUS

Definition: THE MAXIMUM AND MINIMUM TEMPERATURES TO WHICH THE TEMPERATURE COEFFICIENT APPLIES, EXPRESSED IN DEGREES CELSIUS.

Reply Instructions: Enter the numeric values separated by a slash. Precede negative values with an M and positive valus with a P. (e.g., AAQHFM55.0/P105.0*)

For Applicability Key E, if different temperature coefficient values for specified parts of the total temperature range were entered for PAC AAPE, enter the corresponding temperature range values using I/SAC from Appendix C, Table 12. Sequence replies so the first temperature range entered is the one related to the first temperature coefficient entered for MRC AAPE, etc. (e.g.,

AAQH1AFM55.0/P250.0*

AAQH1BFP250.0/P340.0*)

E*

AEBZ L SCHEMATIC DIAGRAM DESIGNATOR

Definition: A DESIGNATOR INDICATING A GRAPHIC REPRESENTATION, IN STANDARD AND ACCEPTED SYMBOLS, OF ESSENTIAL ELECTRICAL-ELECTRONIC ELEMENTS AND RELATED CONNECTIONS ON THE ITEM.

Reply Instructions: Enter the applicable designator from Appendix B , Reference Drawing Group C. (e.g., AEBZL6*)

APP Key	MRC	Mode Code	Requirements

ALL

AAQZ D INCLOSURE METHOD

Definition: THE MEANS PROVIDED TO COAT, COVER, OR PROTECT THE ITEM.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., AAQZDD*; AAQZDB$DC*)

REPLY CODE	REPLY (AA59)
B	ENCAPSULATED (inclosed in and/or impregnated by a material, such as a thermosetting plastic, glass, vitreous enamel, etc., in intimate contact with the item)
C	ENCASED (wholly or partially inclosed in a material which provides physical protection to the item. The encasement is not necessarily in intimate contact with all surfaces of the item and is usually fabricated to separate distinctive configuration)
D	HERMETICALLY SEALED (a structural feature whereby an item's inclosure materials, such as metal, glass, or ceramic, are fused together to prevent the entry, or exit, of gases, moisture, or liquids)
A	UNINCLOSED (uninsulated items, items insulated solely by a sleeve or similar protective means)

ALL

STYL L STYLE DESIGNATOR

Definition: THE STYLE DESIGNATION INDICATING THE CONFIGURATION THAT MOST NEARLY CORRESPONDS TO THE APPEARANCE OF THE ITEM.

Reply Instructions: Enter the applicable style designator from Appendix B , Reference Drawing Group A. (e.g., STYLL14*)

ALL

AARB D TERMINAL TYPE

Definition: INDICATES THE TYPE OF TERMINALS FOR PROVIDING ELECTRICAL CONNECTION TO THE ITEM.

APP Key	MRC	Mode Code	Requirements

Reply Instructions: Enter the applicable Reply Code from Appendix A , Table 2. (e.g., AARBDAU*; AARBDAU$$DAW*; AARBDAK$DAL*)

For Applicability Key B, omit fixed tap terminals.

See Appendix B, Reference Drawing Group B, for illustrations of Terminal Types.

ALL*

AARF A MIL-STD-1276 WIRE LEAD TYPE DESIGNATOR

Definition: INDICATES THE TYPE DESIGNATOR, PER MIL-STD-1276, OF THE DETAIL REQUIREMENTS OF LEADS USED ON ELECTRONIC COMPONENTS.

Reply Instructions: Enter the applicable MIL-STD-1276 type designator.

(e.g., AARFAN-1*)

For items having different type designators for the terminals, record each type designator using AND coding ($$).

(e.g., AARFAN-1$$AN-3*)

E

AARA A TERMINAL QUANTITY

Definition: THE NUMBER OF TERMINALS FOR PROVIDING ELECTRICAL CONNECTION TO THE ITEM.

Reply Instructions: Enter the numeric value. (e.g., AARAA14*)

ALL

AARG D RELIABILITY INDICATOR

Definition: AN INDICATION THAT THE LEVEL OF PROBABILITY THAT AN ITEM WILL OPERATE WITHOUT FAILURE, AT A SPECIFIED RATED CAPABILITY, AT A SPECIFIED TEMPERATURE, AND FOR A SPECIFIED PERIOD OF TIME, HAS BEEN ESTABLISHED BY TESTING RANDOM SAMPLES OF PRODUCTION LOT.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., AARGDE*)

APP Key	MRC	Mode Code	Requirements

Enter Reply Code E for this requirement only if source data indicates the item being described has been measured for reliability and the source document identification is recorded in reply to MRC TEST.

REPLY CODE	REPLY (AA61)
E	ESTABLISHED
N	NOT ESTABLISHED

NOTE FOR MRC AARH: IF REPLY CODE E IS ENTERED FOR MRC AARG, REPLY TO MRC AARH.

A*, B*, C*, D*, E* (See Note Above)

AARH B RELIABILITY FAILURE RATE LEVEL IN PERCENT

Definition: THE RATE OF FAILURE DETERMINED UNDER SPECIFIED CONDITIONS TO ESTABLISH THE RELIABILITY OF AN ITEM, EXPRESSED IN PERCENT.

Reply Instructions: Enter the numeric value. (e.g., AARHB0.001*)

A, B

AARE D REACTANCE CHARACTERISTIC

Definition: THE INDUCTIVE OR NONINDUCTIVE CONDITION RESULTING FROM THE METHOD USED IN PLACING (WINDING) WIRE ON A FORM IN THE CONSTRUCTION OF ELECTRICAL COMPONENTS.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., AAREDA*)

Reply as noninductive if winding a reverse pi-wound, bifilar wound, wound by Ayrton-Perry or Chapron methods, or if specifically designated as noninductive by the manufacturer. List all others as inductive.

REPLY CODE	REPLY (AA60)
A	INDUCTIVE
B	NONINDUCTIVE

ALL*

APP Key	MRC	Mode Code	Requirements
	ABJT	J	TERMINAL LENGTH

Definition: A MEASUREMENT OF THE LONGEST DIMENSION OF A TERMINAL, IN DISTINCTION FROM WIDTH.

Reply Instructions: Enter the applicable Reply Codes from Tables 1 and 2 below, followed by the numeric value. (e.g., ABJTJAA1.500*; ABJTJAA1.500$$JAA1.750*; ABJTJLA1.6*; ABJTJAB0.740$$JAC0.760*)

Table 1

REPLY CODE	REPLY (AA05)
A	INCHES
L	MILLIMETERS

Table 2

REPLY CODE	REPLY (AC20)
A	NOMINAL
B	MINIMUM
C	MAXIMUM

ALL*

	AFWW	J	TERMINAL WIDTH

Definition: A MEASUREMENT TAKEN AT RIGHT ANGLES TO THE LENGTH OF THE TERMINAL, IN DISTINCTION FROM THICKNESS.

Reply Instructions: Enter the applicable Reply Codes from Tables 1 and 2 below, followed by the numeric value. (e.g., AFWWJAA0.188*; AFWWJAA0.219$$JAA0.250*; AFWWJLA1.6*; AFWWJAB0.245$$JAC0.255*)

Table 1

REPLY CODE	REPLY (AA05)
A	INCHES
L	MILLIMETERS

Table 2

REPLY CODE	REPLY (AC20)
A	NOMINAL
B	MINIMUM
C	MAXIMUM

APP Key	MRC	Mode Code	Requirements

NOTE FOR MRCS CBBL AND FEAT: E MODE REPLIES WILL NOT BE ACCEPTED IN REPLY TO MRC CBBL. IF A REPLY IS NOT REFERENCED ON THE TABLE FOR MRC CBBL, ENTER THE FEATURE IN REPLY TO MRC FEAT.

ALL* (See Note Above)

CBBL D FEATURES PROVIDED

Definition: THOSE FEATURES, NOT OTHERWISE SPECIFIED, WHICH MAY BE REQUIRED FOR PROPER FUNCTIONING OF THE ITEM.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., CBBLDANY*; CBBLDAAJ$$DANZ*)

REPLY CODE	REPLY (AN47)
AXL #	ALTERNATE CURRENT
AAJ	MOUNTING HARDWARE
ANY	RADIOGRAPHICALLY INSPECTED
ANZ	RATED FOR CIRCUIT PROTECTION CAPABILITY

ALL * (See Note Preceding MRC CBBL)

FEAT G SPECIAL FEATURES

Definition: THOSE UNUSUAL OR UNIQUE CHARACTERISTICS OR QUALITIES OF AN ITEM NOT COVERED IN THE OTHER REQUIREMENTS AND WHICH ARE DETERMINED TO BE ESSENTIAL FOR IDENTIFICATION.

Reply Instructions: Enter the reply in clear text. Separate multiple replies with a semicolon. (e.g., FEATGADJUSTABLE NOSE CLIP*; FEATGADJUSTABLE NOSE PIECE; DISPOSABLE*)

ALL*

TEST J TEST DATA DOCUMENT

APP Key	MRC	Mode Code	Requirements

Definition: THE SPECIFICATION, STANDARD, DRAWING, OR SIMILAR INSTRUMENT THAT SPECIFIES ENVIRONMENTAL AND PERFORMANCE REQUIREMENTS OR TEST CONDITIONS UNDER WHICH AN ITEM IS TESTED AND ESTABLISHES ACCEPTABLE LIMITS WITHIN WHICH THE ITEM MUST CONFORM IDENTIFIED BY AN ALPHABETIC AND/OR NUMERIC REFERENCE NUMBER. INCLUDES THE COMMERCIAL AND GOVERNMENT ENTITY (CAGE) CODE OF THE ENTITY CONTROLLING THE INSTRUMENT.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the 5-position CAGE Code, a dash, and the document identification number.

(e.g., TESTJA12345-CWX654321*;

TESTJA1234A-654321$$JB5556A-663654*;

TESTJAA2345-654321$JB55566-663654*)

REPLY CODE	REPLY (AC28)
A	SPECIFICATION (Includes engineering type bulletins, brochures, etc., that reflect specification type data in specification format; excludes commercial catalogs, industry directories, and similar trade publications, reflecting general type data on certain environmental and performance requirements and test conditions that are shown as "typical," "average," "nominal," etc.)
B	STANDARD (Includes industry or association standards, individual manufacturer standards, etc.)
C	DRAWING (This is the basic governing drawing, such as a contractor drawing, original equipment manufacturer drawing, etc.; excludes any specification, standard, or other document that may be referenced in a basic governing drawing)

ALL*

SPCL G SPECIAL TEST FEATURES

Definition: TEST CONDITIONS AND RATINGS, OR ENVIRONMENTAL AND PERFORMANCE REQUIREMENTS THAT ARE DIFFERENT, MORE CRITICAL, OR MORE SPECIFIC THAN THOSE SPECIFIED IN A GOVERNING TEST DATA DOCUMENT.

APP Key	MRC	Mode Code	Requirements

Reply Instructions: Enter the reply in clear text. (e.g., SPCLGSELECTED AND TESTED FOR NAVIGATIONAL SYSTEMS*)

ZZZK * J SPECIFICATION/STANDARD DATA

Definition: THE DOCUMENT DESIGNATOR OF THE SPECIFICATION OR STANDARD WHICH ESTABLISHED THE ITEM OF SUPPLY.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the Commercial and Government Entity (CAGE) Code of the entity controlling the document, a dash, and the document designator. The agency that controls the limited coordination document must be preceded and followed by a slash following the designator. The word canceled or superseded must be preceded and followed by a slash for the designator. Professional and industrial association specifications/standards are differentiated from a manufacturer's specification in that the data has been coordinated and published by the professional and industrial association. Include amendments and revisions where applicable.

(e.g., ZZZKJT81337-30642B*;

ZZZKJS81349-MIL-D-180 REV1/CANCELED/*;

ZZZKJP80205-NAS1103*;

ZZZKJS81349-MIL-C-1140C/CE/*;

ZZZKJT81337-30642B$$JP80205-NAS1103*)

REPLY CODE	REPLY (AN62)
S	GOVERNMENT SPECIFICATION
T	GOVERNMENT STANDARD
D	MANUFACTURERS SOURCE CONTROL
R	MANUFACTURERS SPECIFICATION
N	MANUFACTURERS SPECIFICATION CONTROL
M	MANUFACTURERS STANDARD
B	NATIONAL STD/SPEC
A	PROFESSIONAL/INDUSTRIAL ASSOCIATION SPECIFICATION
P	PROFESSIONAL/INDUSTRIAL ASSOCIATION STANDARD

APP Key	MRC	Mode Code	Requirements

NOTE FOR MRC ZZZT: IF THE SPECIFICATION/STANDARD CITED IN REPLY TO MRC ZZZK IS NONDEFINITIVE, REPLY TO MRC ZZZT. THIS REPLY IS THE DATA WHICH IS NOT RECORDED IN SEGMENT C.

ALL* (See Note Above)

ZZZT J NONDEFINITIVE SPEC/STD DATA

Definition: THE NUMBER, LETTER, OR SYMBOL THAT INDICATES THE TYPE, STYLE, GRADE, CLASS, AND THE LIKE, OF AN ITEM IN A NONIDENTIFYING SPECIFICATION OR STANDARD.

Reply Instructions: Enter the applicable Reply Code from Appendix A , Table 1, followed by the appropriate number, letter, or symbol. (e.g., ZZZTJTY1*; ZZZTJTY1$$JSTA*; ZZZTJTY1$JSTA*)

ALL*

ZZZW G DEPARTURE FROM CITED DOCUMENT

Definition: THE TECHNICAL DIFFERENTIATING CHARACTERISTIC(S) OF AN ITEM OF SUPPLY WHICH DEPART(S) FROM THE TEXT OF A SPECIFICATION OR A STANDARD IN THAT IT REPRESENTS A SELECTION OF CHARACTERISTICS STATED IN THE SPECIFICATION OR STANDARD AS BEING OPTIONAL, OR A VARIATION FROM ONE OR MORE OF THE STATED CHARACTERISTICS, OR AN ADDITIONAL CHARACTERISTIC NOT STATED IN THE SPECIFICATION OR STANDARD.

Reply Instructions: Enter the reply in clear text. (e.g., ZZZWGAS MODIFIED BY MATERIAL*)

ALL*

ZZZY G REFERENCE NUMBER DIFFERENTIATING CHARACTERISTICS

Definition: A FEATURE OF THE ITEM OF SUPPLY WHICH MUST BE SPECIFICALLY RECORDED WHEN THE REFERENCE NUMBER COVERS A RANGE OF ITEMS.

Reply Instructions: Enter the reply in clear text. (e.g., ZZZYGCOLOR CODED LEADS*; ZZZYGAS DIFFERENTIATED BY MATERIAL*)

ALL*

APP Key	MRC	Mode Code	Requirements
	CRTL	A	CRITICALITY CODE JUSTIFICATION

Definition: THE MASTER REQUIREMENT CODES OF THOSE REQUIREMENTS WHICH ARE TECHNICALLY CRITICAL BY REASON OF TOLERANCE, FIT, PERFORMANCE, OR OTHER CHARACTERISTICS WHICH AFFECT IDENTIFICATION OF THE ITEM.

Reply Instructions: Enter the Master Requirement Code for the requirement, the reply to which renders the item as being critical. (e.g., CRTLAMATL*; CRTLAMATL$$ASURF*)

Reply to this requirement only if the header record for the item identification for the item being identified has been coded as critical.

NOTE FOR MRC PRPY: IF DOCUMENT AVAILABILITY CODE B, D, F, OR H, REPLY TO MRC PRPY.

ALL* (See Note Above)

	PRPY	A	PROPRIETARY CHARACTERISTICS

Definition: IDENTIFICATION OF THOSE CHARACTERISTICS INCLUDED IN THE DESCRIPTION FOR WHICH A NON-GOVERNMENT ACTIVITY HAS IDENTIFIED ALL OR SELECTED CHARACTERISTICS OF THE ITEM AS BEING PROPRIETARY AND THEREFORE RESTRICTED FROM RELEASE OUTSIDE THE GOVERNMENT WITHOUT PRIOR PERMISSION OF THE ORIGINATOR OF THE DATA.

Reply Instructions: Enter the MRC codes of the individual characteristics of the description which are marked proprietary on the technical data, using AND coding ($$) for multiple characteristics. If all the MRCs are proprietary, enter the reply PACS. If none of the MRCs is proprietary, enter the reply NPAC. (e.g., PRPYAPACS*; PRPYANPAC*; PRPYAMATL$$ASURF*)

ALL*

	ELRN	G	EXTRA LONG REFERENCE NUMBER

Definition: A REFERENCE NUMBER EXCEEDING 32 POSITIONS.

Reply Instructions: Enter the entire reference number. Do not include the 5-position Commercial and Government Entity (CAGE) Code unless there is more than one extra long reference number on the NSN, (e.g., ELRNGANN112036BIL060557LEN313605UZ62365*).

APP Key	MRC	Mode Code	Requirements

If there is more than one extra long reference number on the NSN, include the CAGE or NCAGE and separate each reference by using the "&" character, (e.g., 28480 ANN112036BIL060557LEN313605UZ62365 & S1234 NN112036BIL060557LEN313605UZ62365).

In determining quantity of characters in the reference number, count will be made after modification in accordance with Volume 2, Chapter 9, FLIS Procedures Manual, DoD 4100.39-M.

NOTE FOR MRC NHCF: IF THE CRITICALITY CODE IS E, H, OR M, REPLY TO MRC NHCF.

ALL*

NHCF D NUCLEAR HARDNESS CRITICAL FEATURE

Definition: AN INDICATION OF THE NUCLEAR HARDNESS CRITICALITY OF THE ITEM.

Reply Instructions: Enter the reply code from the table below. (e.g., NHCFDCY*)

REPLY CODE	REPLY (AD05)
CY	HARDENED

SECTION III

APP Key	MRC	Mode Code	Requirements

A, B, C, D

AAPZ D HEAT SINK MATERIAL

Definition: THE SUBSTANCE OF WHICH THE HEAT SINK IS COMPOSED.

Reply Instructions: Enter the applicable Reply Code from the table below. (e.g., AAPZDAL0000*; AAPZDAL0000$$DCU0000$DST0000*)

REPLY CODE	REPLY (AD09)

APP Key	MRC	Mode Code	Requirements
		AL0000	ALUMINUM ALLOY
		CU0000	COPPER
		ST0000	STEEL

A, B, C, D

AAQA J HEAT SINK LENGTH

Definition: THE LARGEST DIMENSION OF A FLAT RECTANGULAR/ELLIPTICAL, OR A CHASSIS TYPE HEAT SINK.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., AAQAJA3.500*; AAQAJL1.6*)

REPLY CODE	REPLY (AA05)
A	INCHES
L	MILLIMETERS

A, B, C, D

AAQB J HEAT SINK WIDTH

Definition: A MEASUREMENT TAKEN AT RIGHT ANGLES TO THE LENGTH OF A FLAT RECTANGULAR/ELLIPTICAL, OR CHASSIS TYPE HEAT SINK, IN DISTINCTION FROM THICKNESS.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., AAQBJA1.500*; AAQBJL1.6*)

REPLY CODE	REPLY (AA05)
A	INCHES
L	MILLIMETERS

A, B, C, D

AAQC J HEAT SINK DIAMETER

Definition: THE LENGTH OF A STRAIGHT LINE WHICH PASSES THROUGH THE CENTER OF A FLAT DISK TYPE HEAT SINK, AND TERMINATES AT THE CIRCUMFERENCE.

APP Key	MRC	Mode Code	Requirements

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., AAQCJA1.500*; AAQCJL1.6*)

REPLY CODE	REPLY (AA05)
A	INCHES
L	MILLIMETERS

A, B, C, D

AAQD J HEAT SINK HEIGHT

Definition: A MEASUREMENT FROM THE BOTTOM TO THE TOP OF A CHASSIS TYPE HEAT SINK, IN DISTINCTION FROM DEPTH.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., AAQDJA2.500*; AAQDJL1.6*)

REPLY CODE	REPLY (AA05)
A	INCHES
L	MILLIMETERS

A, B, C, D

AAQE J HEAT SINK THICKNESS

Definition: A MEASUREMENT OF THE SMALLEST PHYSICAL DIMENSION OF A HEAT SINK, IN DISTINCTION FROM LENGTH OR WIDTH.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the numeric value. (e.g., AAQEJA0.062*; AAQEJL1.6*)

REPLY CODE	REPLY (AA05)
A	INCHES
L	MILLIMETERS

ALL

AGAV G END ITEM IDENTIFICATION

Definition: THE NATIONAL STOCK NUMBER OR THE IDENTIFICATION INFORMATION OF THE END EQUIPMENT FOR WHICH THE ITEM IS A PART.

APP Key	MRC	Mode Code	Requirements

Reply Instructions: Enter the reply in clear text.

(e.g., AGAVG3930-00-000-0000*;

AGAVGFORKLIFT TRUCK, SMITH COPRPORATION MODEL 12, TYPE A*)

ALL

PMLC J PRECIOUS MATERIAL AND LOCATION

Definition: AN INDICATION OF THE PRECIOUS MATERIAL AND ITS LOCATION IN THE ITEM.

Reply Instructions: Enter the applicable Reply Code from the table below, followed by the location in clear text. (e.g., PMLCJAUA000TERMINALS*; PMLCJAUA000TERMINALS$$JAGA000INTERNAL SURFACES*; PMLCJAGA000TERMINALS$JAUA000INTERNAL SURFACES*)

REPLY CODE	REPLY (MA01)
AUA000	GOLD
IRA000	IRIDIUM
AZA000	OSMIUM
PDA000	PALLADIUM
PTA000	PLATINUM
RHA000	RHODIUM
RTA000	RUTHENIUM
AGA000	SILVER

ALL

SUPP G SUPPLEMENTARY FEATURES

Definition: CHARACTERISTICS OR QUALITIES OF AN ITEM, NOT COVERED IN ANY OTHER REQUIREMENT, WHICH ARE CONSIDERED ESSENTIAL INFORMATION FOR ONE OR MORE FUNCTIONS EXCLUDING NSN ASSIGNMENT.

Reply Instructions: Enter the reply in clear text. (e.g., SUPPGMAY INCL HOLE IN UPPER SUPPORT FOR MTG DURING SHIPMENT*)

ALL

GRAC # B MAXIMUM PERMANENT VOLTAGE IN VOLTS

APP Key	MRC	Mode Code	Requirements
			Definition: THE MAXIMUM DIRECT OR ROOT MEAN SQUARE ALTERNATING CURRENT VOLTAGE THAT CAN BE PERMANENTLY APPLIED TO THE TERMINALS OF THE ITEM, EXPRESSED IN VOLTS.
			Reply Instructions: Enter the numeric value. (e.g., GRACB700.0*)
ALL*			
	CXCY	G	PART NAME ASSIGNED BY CONTROLLING AGENCY
			Definition: THE NAME ASSIGNED TO THE ITEM BY THE GOVERNMENT AGENCY OR COMMERCIAL ORGANIZATION CONTROLLING THE DESIGN OF THE ITEM.
			Reply Instructions: Enter the reply in clear text. (e.g., CXCYGLINE PROCESSOR CONTROL BOARD*)

Reply Tables

Table 1 - NONDEFINITIVE SPEC/STD DATA
NONDEFINITIVE SPEC/STD DATA

REPLY CODE	REPLY (AD08)
AL	ALLOY
AN	ANNEX
AP	APPENDIX
AC	APPLICABILITY CLASS
AR	ARRANGEMENT
AS	ASSEMBLY
AB	ASSORTMENT
BX	BOX
CY	CAPACITY
CA	CASE
CT	CATEGORY
CL	CLASS
CE	CODE
CR	COLOR
CC	COMBINATION CODE
CN	COMPONENT
CP	COMPOSITION
CM	COMPOUND
CD	CONDITION
CS	CONSTRUCTION
DE	DESIGN
DG	DESIGNATOR
DW	DRAWING NUMBER
EG	EDGE
EN	END(S)
FY	FAMILY
FG	FIGURE
FN	FINISH
FM	FORM
FA	FORMULA
GR	GRADE
GP	GROUP
BA	IMAGE COLOR
NS	INSERT

REPLY CODE	REPLY (AD08)
TM	ITEM
KD	KIND
KT	KIT
LG	LENGTH
LT	LIMIT
MK	MARK
AA	MARKER
ML	MATERIAL
BB	MAXIMUM DENSITY
MH	MESH
ME	METHOD
BC	MINIMUM DENSITY
MD	MODEL
MT	MOUNTING
NR	NUMBER
PT	PART
PN	PATTERN
PC	PHYSICAL CONDITION
PS	PIECE
PL	PLAN
PR	POINT
QA	QUALITY
RN	RANGE
RT	RATING
RF	REFERENCE NUMBER
SC	SCHEDULE
SB	SECTION
SL	SELECTION
SE	SERIES
SV	SERVICE
SX	SET
SA	SHADE
SH	SHAPE
SG	SHEET
SZ	SIZE
PZ	SPECIES
SQ	SPECIFICATION SHEET
SD	SPEED
ST	STYLE
SS	SUBCLASS
SF	SUBFORM
SP	SUBTYPE
SN	SURFACE CONDITION
SY	SYMBOL
SM	SYSTEM
TB	TABLE
TN	TANNAGE
TP	TEMPER

REPLY CODE	REPLY (AD08)
TX	TEXTURE
TK	THICKNESS
TT	TREATMENT
TR	TRIM
TY	TYPE
YN	UNIT
VA	VARIETY
WT	WEIGHT
WD	WIDTH

Table 2 - TERMINAL TYPES

SEE ILLUSTRATIONS IN APPENDIX B, REFERENCE DRAWING GROUP B.

TERMINAL TYPES

REPLY CODE	REPLY (AA58)
AB	BRACKET
AC	CLAMP
AF	EYELET
AJ	FERRULE
AK	FERRULE W/TAB
AL	FERRULE W/WIRE LEAD
FU	ONE SURFACE
AM	PIN
XM #	PIN CLAMP
AN	SCREW BASE
AQ	SOLDER STUD
XP #	SOLDER THIMBLE
XQ #	TAB, QUICK DISCONNECT
AT	TAB, SOLDER LUG
AU	TAB W/SCREW
AV	TAB W/WIRE LEAD
AW	TAB W/WIRE LEAD W/TAB
AX	TAPERED FERRULE
BD	TERMINAL TYPE PER BODY STYLE
AZ	THREADED STUD
BA	TURRET
XN #	WIRE BRAID W/INSULATING BEADS
XL #	WIRE CLAMP
BB	WIRE LEAD
ET	WRAP AROUND

Reference Drawing Groups

REFERENCE DRAWING GROUP A Tables
SECTION A THROUGH L

GENERAL INSTRUCTIONS

NOTE: RESISTORS HAVING THE SAME GENERAL BODY SHAPE, BUT HAVING EITHER CONICAL, FLAT, OR SPHERICAL END SHAPES AS THE ONLY DIFFERENTIATING CHARACTERISTICS, ARE CONSIDERED TO HAVE THE SAME BODY STYLE. Determination of appropriate Body Style Designator.In the selection of the applicable body style first consideration shall be given to the body shape then to the type of terminal. Depending on body shape and terminal type, search the applicable Section of Reference Drawing Group A for the most appropriate body style. Reference Drawing Group A is sufficiently comprehensive that for most items an appropriate body style can be selected and its designator entered in reply to MRC STYL.If an appropriate body style cannot be selected in accordance with the above, the remaining sections having the same body shape shall be searched for an appropriate body style without regard to terminal type. If by thus disregarding terminal type, an otherwise appropriate body style can be selected, that style designator shall be entered in reply to MRC STYL. The appropriate designator for the terminal type of the item being described then must be entered in reply to MRC AARB.Enter the applicable Reply Codes from Tables 1 and 2 below, followed by the numeric value. (e.g., ADAQJAA1.000*; ADAQJLA12.7*; ADAQJAB0.875$$JAC1.125*)

REPLY CODE	REPLY (AA05)
A	INCHES
L	MILLIMETERS

REPLY CODE	REPLY (AC20)
A	NOMINAL
B	MINIMUM
C	MAXIMUM

MRC	Mode Code	Name of Dimension
ABPM	J	BODY DIAMETER
ADAG	J	MOUNTING STUD LENGTH
ADAP	J	MOUNTING BUSHING LENGTH
ADAQ	J	BODY LENGTH
ADAT	J	BODY WIDTH
ADAU	J	BODY HEIGHT

MRC	Mode Code	Name of Dimension
AEBY	J	DISTANCE BETWEEN CENTERLINES OF MOUNTING FACILITIES PARALLEL TO
AEHA	J	DISTANCE BETWEEN CENTERLINES OF MOUNTING FACILITIES PARALLEL TO
AFYE	J	MOUNTING BUSHING DIAMETER
BYML	J	MOUNTING HOLE SIZE
CQFG	J	ENCLOSURE LENGTH
CQGZ	J	TOP CONNECTION LENGTH
CQHS	J	WIRE CLAMP LENGTH
CQJK #	J	DISTANCE FROM LATERAL WATERPLUG CENTERLINE TO LONGITUDINAL
CQKP	J	BOTTOM CONNECTION LENGTH
CQLB	J	DISTANCE FROM LATERAL WATERPLUG END TO ENCLOSURE

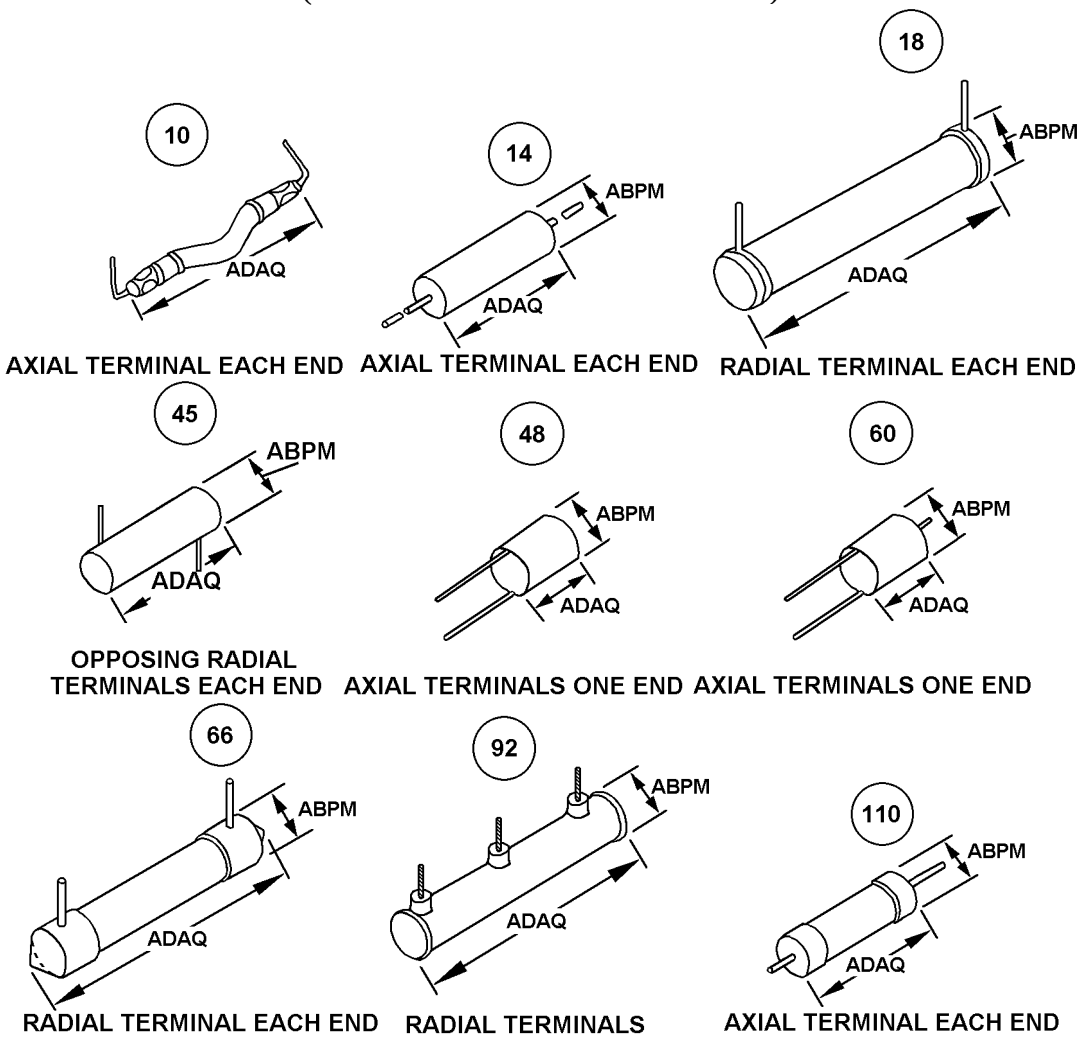
REFERENCE DRAWING GROUP A

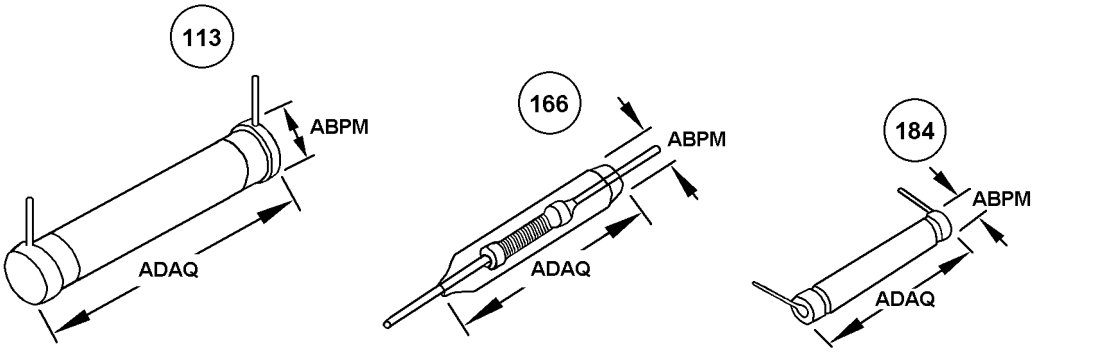
NOTE: OPTIONAL FEATURES. 1. HEAT DISSIPATING FINS MAY ENCIRCLE BODY OR BE PARALLEL TO THE BODY (LENGTHWISE). 2. ITEM MAY HAVE EITHER TWO OR FOUR MOUNTING HOLES. 3. TYPE, LOCATION AND QUANTITY OF TERMINALS ARE REPRESENTATIVE AND ARE NOT A DIFFERENTIATING CHARACTERISTIC WHEN SELECTING A STYLE. QUANTITY AND TYPE OF TERMINALS MAY BE OPTIONALLY LOCATED ON EITHER END.

SECTION A

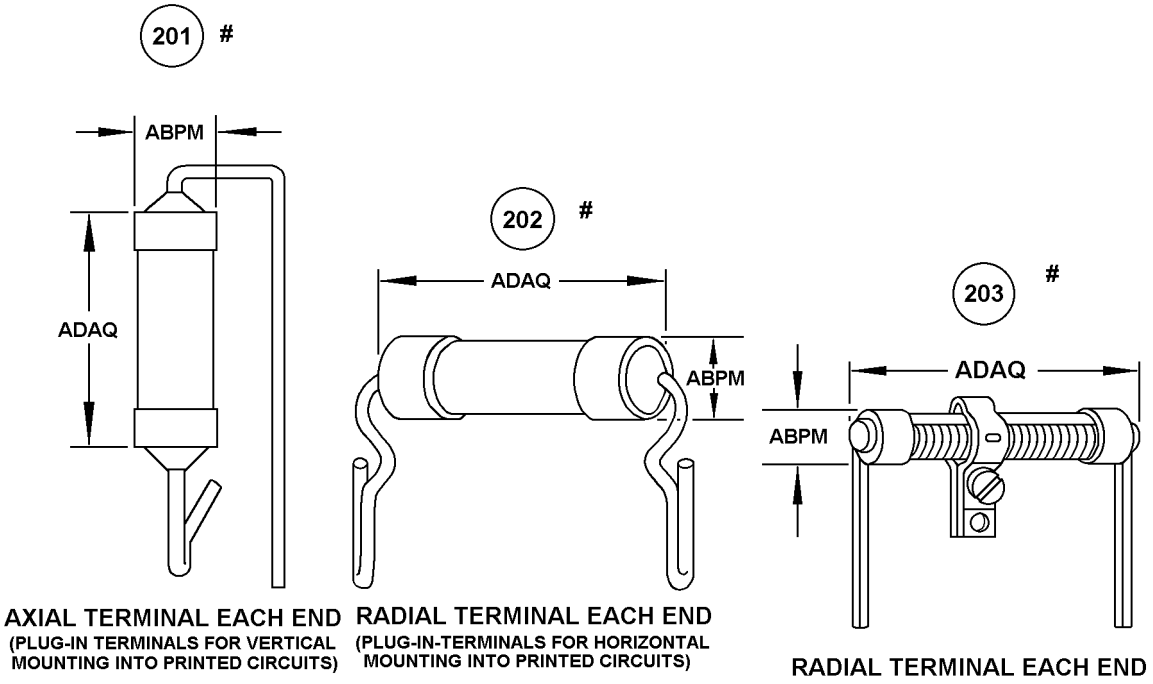
CYLINDRICAL SHAPE, SOLID BODY

(WITH WIRE LEAD TERMINALS)





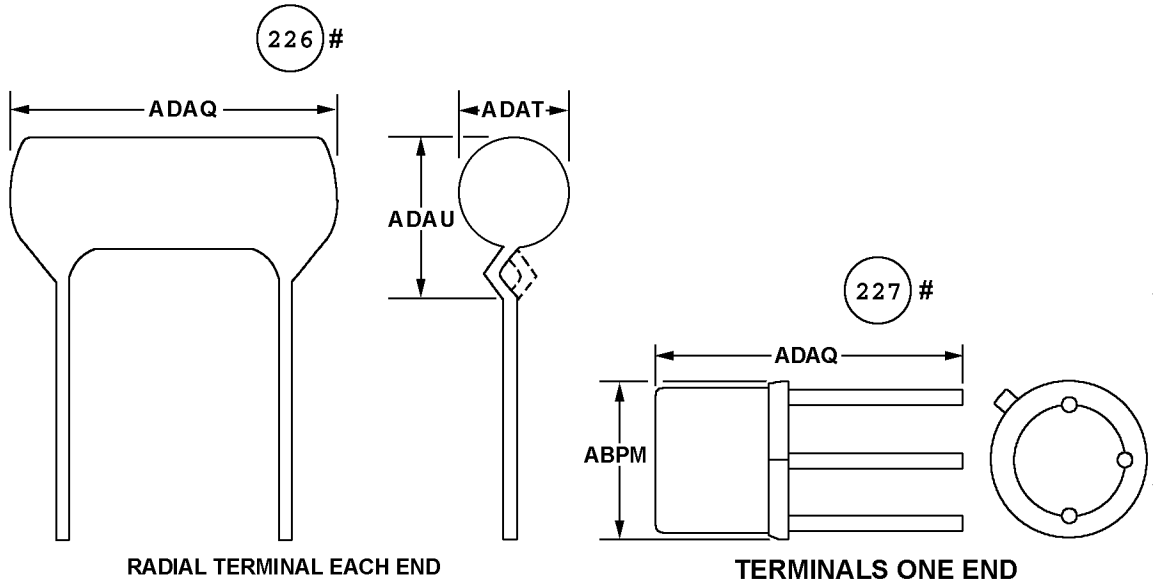
RADIAL TERMINAL EACH END AXIAL TERMINAL EACH END RADIAL TERMINAL EACH END



AXIAL TERMINAL EACH END
(PLUG-IN TERMINALS FOR VERTICAL MOUNTING INTO PRINTED CIRCUITS)

RADIAL TERMINAL EACH END
(PLUG-IN-TERMINALS FOR HORIZONTAL MOUNTING INTO PRINTED CIRCUITS)

RADIAL TERMINAL EACH END



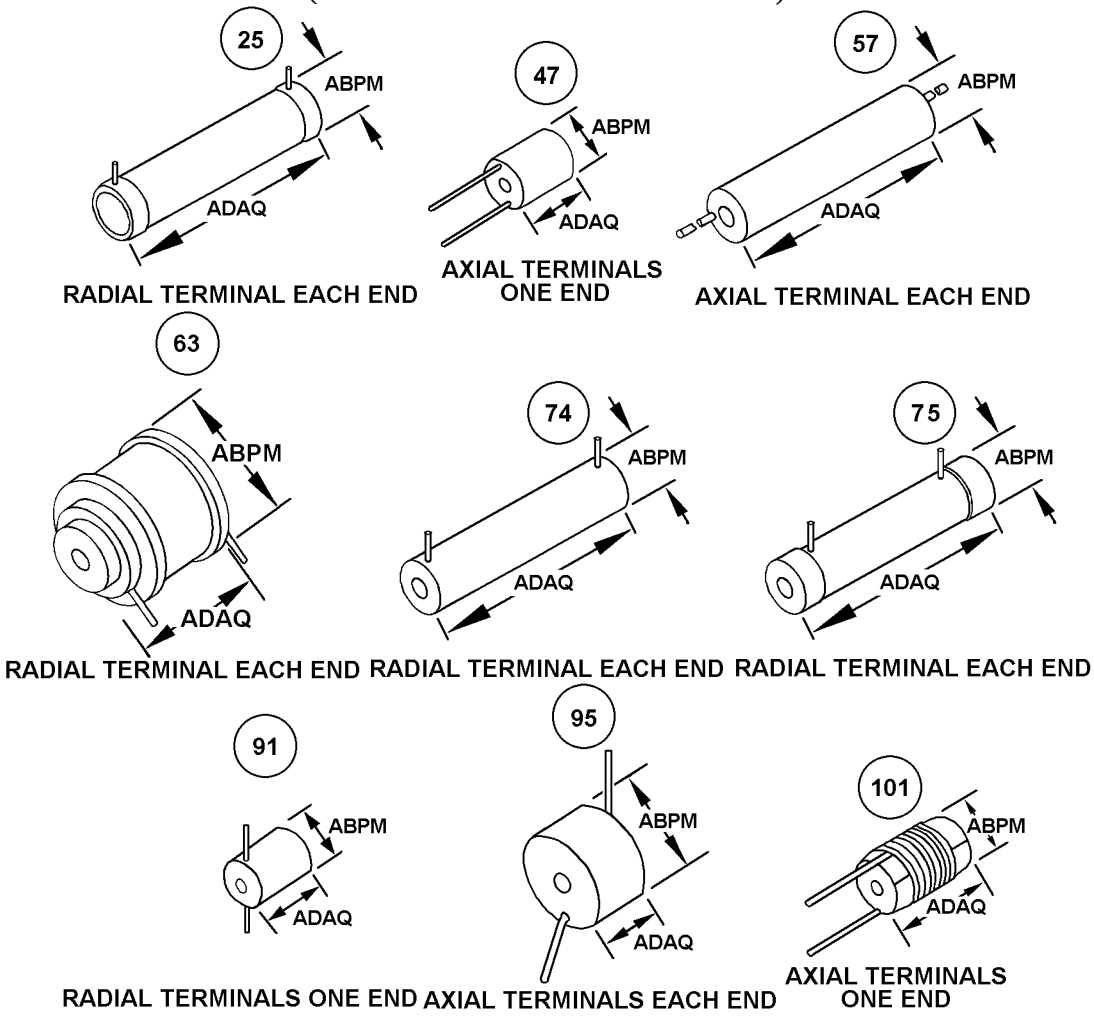
RADIAL TERMINAL EACH END

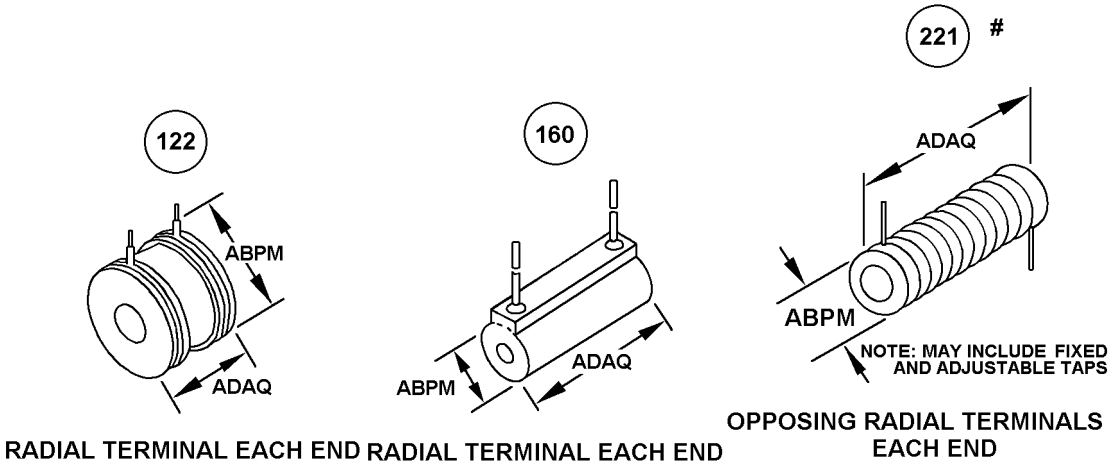
TERMINALS ONE END

SECTION B

CYLINDRICAL SHAPE, THROUGH HOLE BODY

(WITH WIRE LEAD TERMINALS)



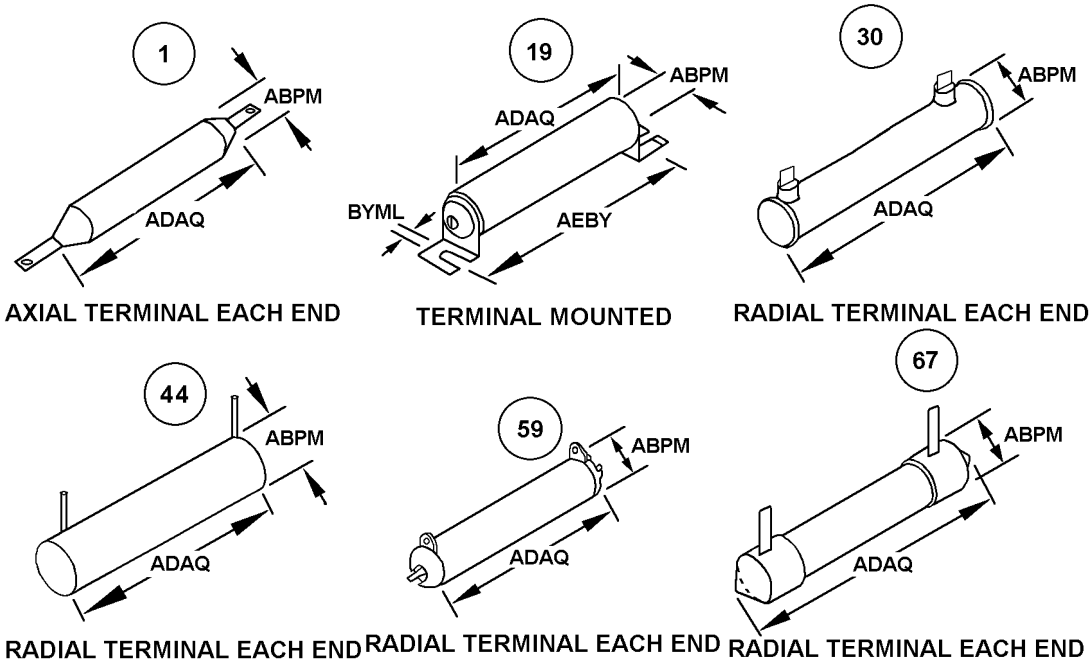


RADIAL TERMINAL EACH END RADIAL TERMINAL EACH END OPPOSING RADIAL TERMINALS EACH END

SECTION C

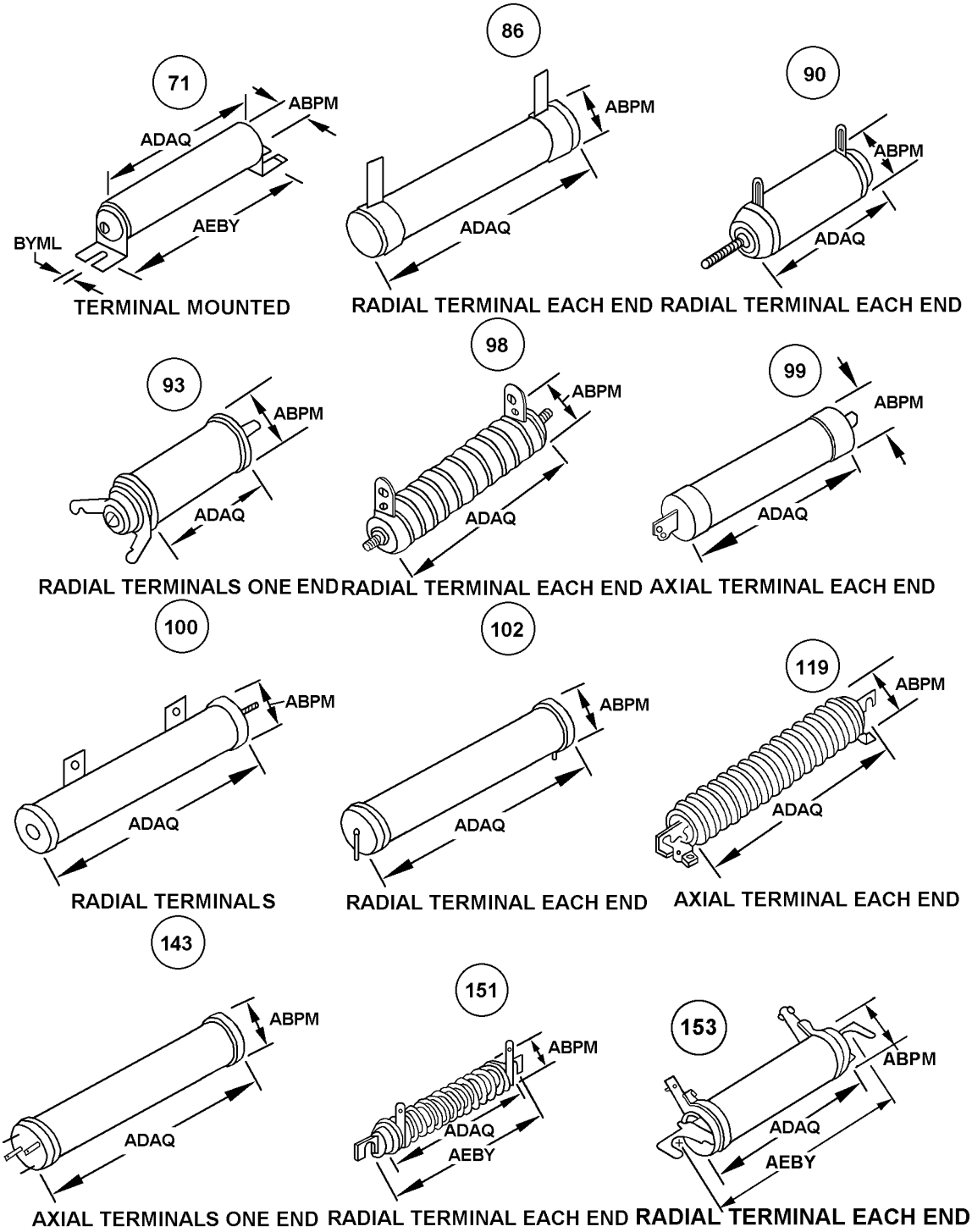
CYLINDRICAL SHAPE, SOLID BODY

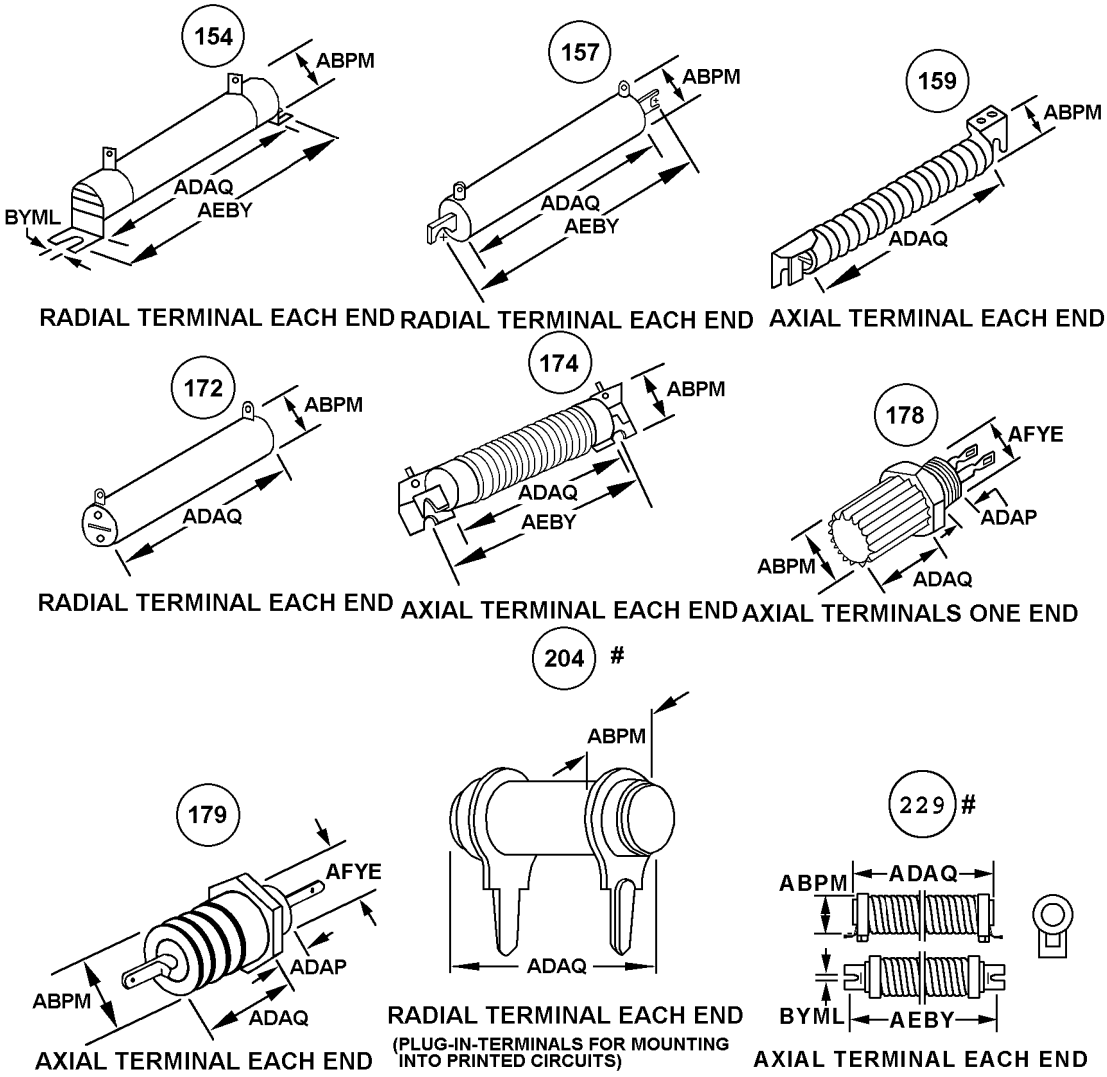
(WITH TAB TERMINALS)



AXIAL TERMINAL EACH END TERMINAL MOUNTED RADIAL TERMINAL EACH END

RADIAL TERMINAL EACH END RADIAL TERMINAL EACH END RADIAL TERMINAL EACH END

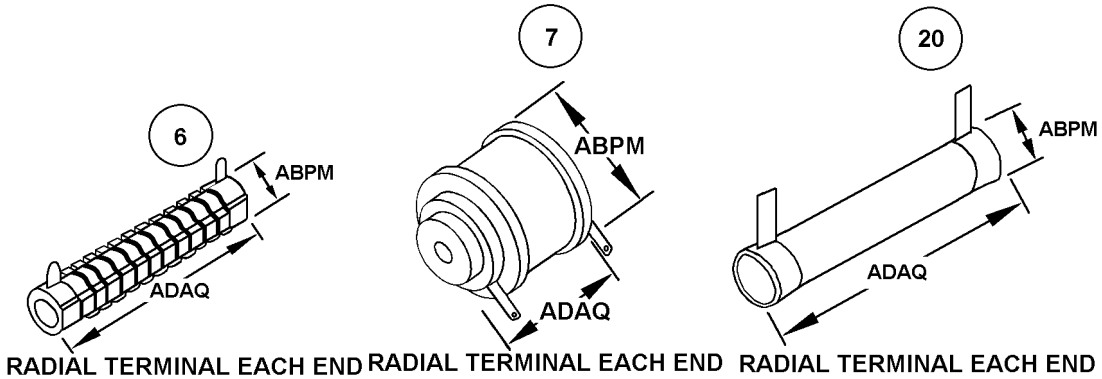

71
ABPM
ADAQ
AEBY
BYML
TERMINAL MOUNTED
86
ABPM
ADAQ
RADIAL TERMINAL EACH END
90
ABPM
ADAQ
RADIAL TERMINAL EACH END
93
ABPM
ADAQ
RADIAL TERMINALS ONE END
98
ABPM
ADAQ
RADIAL TERMINAL EACH END
99
ABPM
ADAQ
AXIAL TERMINAL EACH END
100
ABPM
ADAQ
RADIAL TERMINALS
102
ABPM
ADAQ
RADIAL TERMINAL EACH END
119
ABPM
ADAQ
AXIAL TERMINAL EACH END
143
ABPM
ADAQ
AXIAL TERMINALS ONE END
151
ABPM
ADAQ
AEBY
RADIAL TERMINAL EACH END
153
ABPM
ADAQ
AEBY
RADIAL TERMINAL EACH END

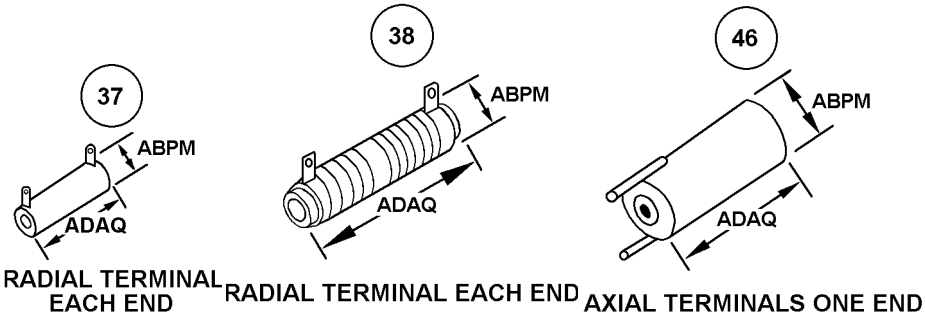


SECTION D

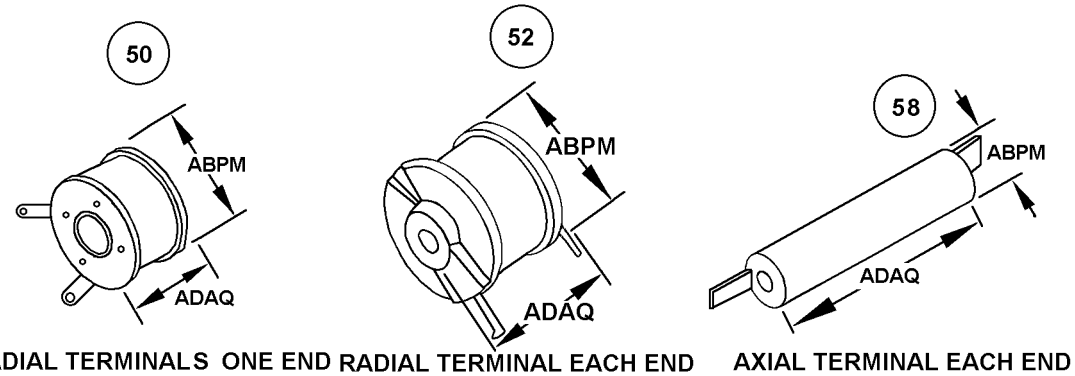
CYLINDRICAL SHAPE, THROUGH HOLE BODY

(WITH TAB TERMINALS)

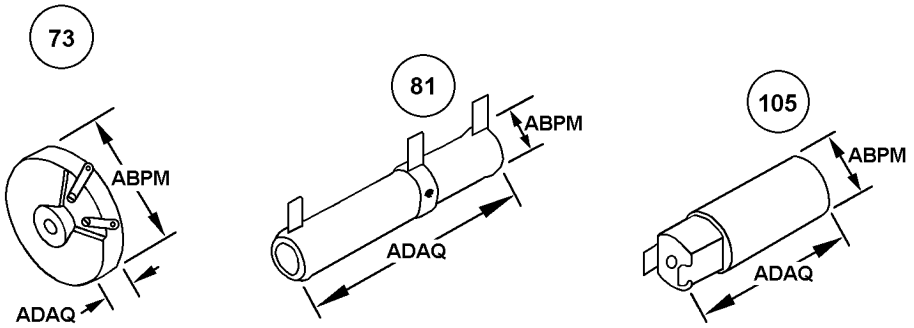




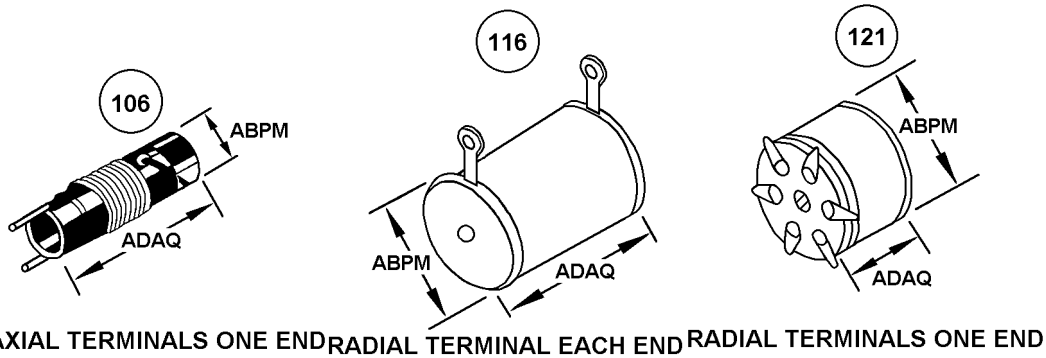
RADIAL TERMINAL EACH END | RADIAL TERMINAL EACH END | AXIAL TERMINALS ONE END



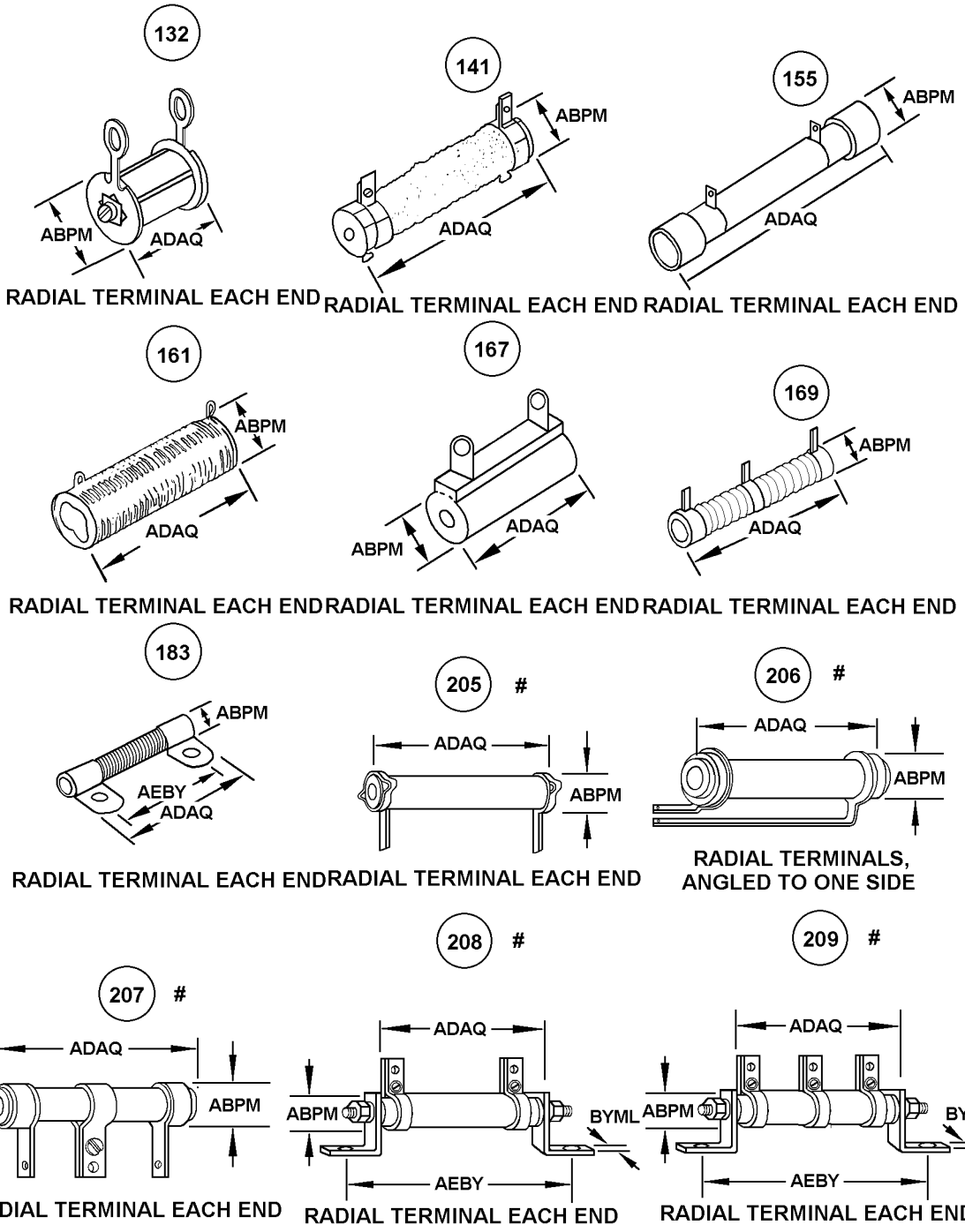
RADIAL TERMINALS ONE END | RADIAL TERMINAL EACH END | AXIAL TERMINAL EACH END

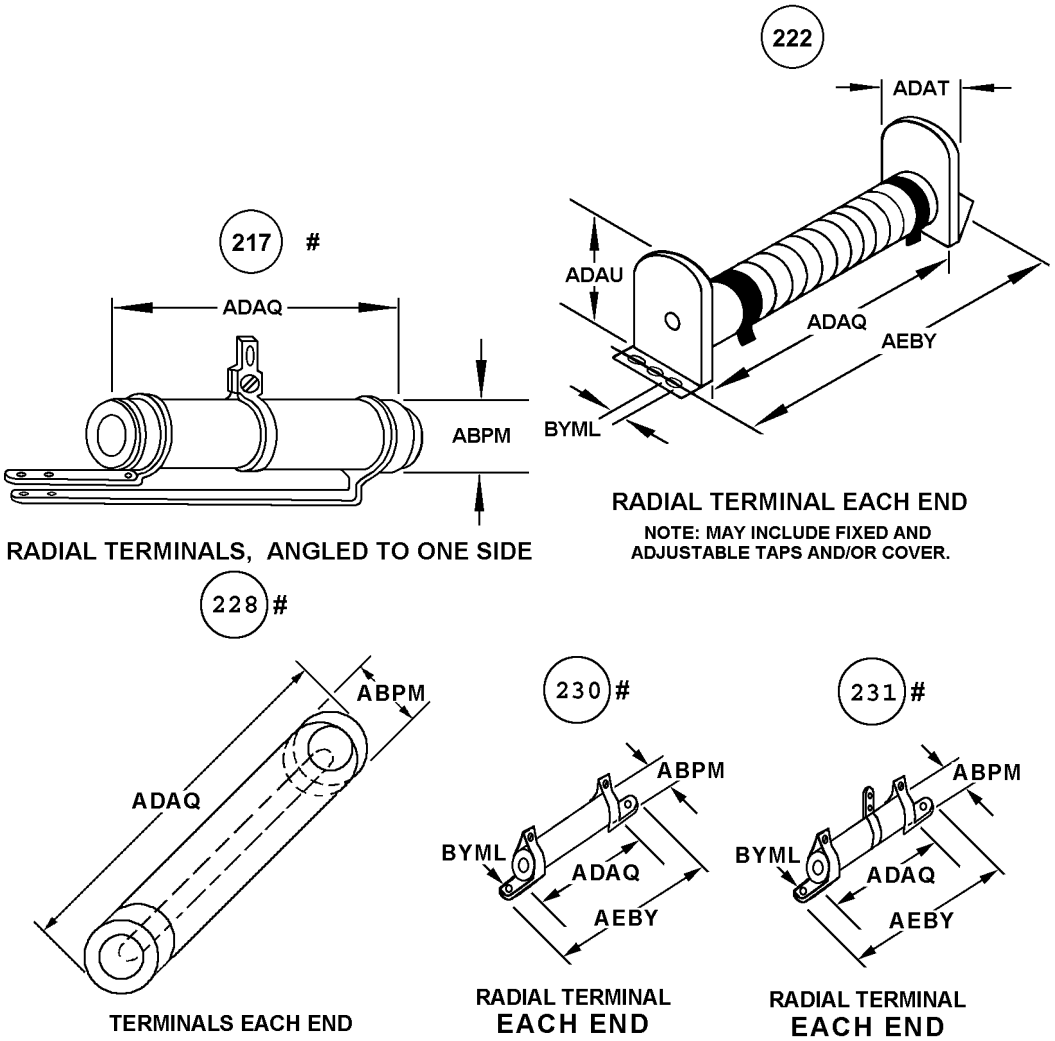


RADIAL TERMINALS ONE END | RADIAL TERMINAL EACH END | AXIAL TERMINALS ONE END



AXIAL TERMINALS ONE END | RADIAL TERMINAL EACH END | RADIAL TERMINALS ONE END

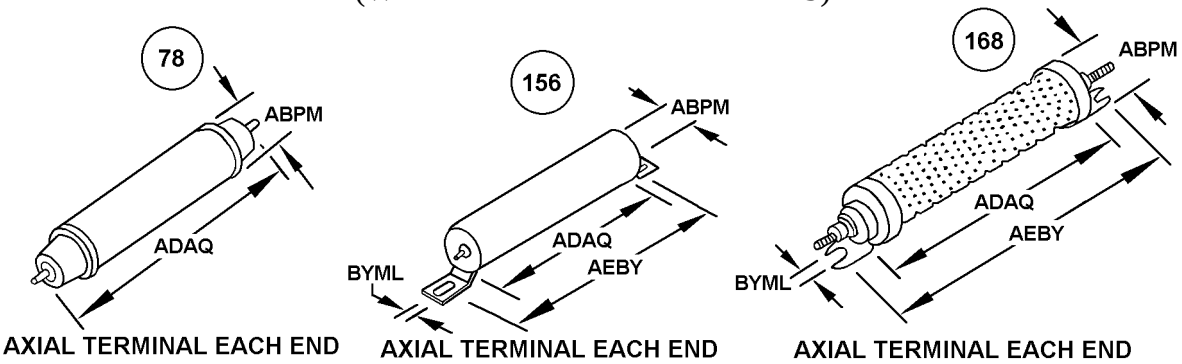

132
ABPM
ADAQ
RADIAL TERMINAL EACH END
141
ABPM
ADAQ
RADIAL TERMINAL EACH END
155
ABPM
ADAQ
RADIAL TERMINAL EACH END
161
ABPM
ADAQ
RADIAL TERMINAL EACH END
167
ABPM
ADAQ
RADIAL TERMINAL EACH END
169
ABPM
ADAQ
RADIAL TERMINAL EACH END
183
ABPM
AEBY
ADAQ
RADIAL TERMINAL EACH END
205 #
ADAQ
ABPM
RADIAL TERMINAL EACH END
206 #
ADAQ
ABPM
RADIAL TERMINALS,
ANGLED TO ONE SIDE
207 #
ADAQ
ABPM
RADIAL TERMINAL EACH END
208 #
ADAQ
ABPM
BYML
AEBY
RADIAL TERMINAL EACH END
209 #
ADAQ
ABPM
BYML
AEBY
RADIAL TERMINAL EACH END



SECTION E

CYLINDRICAL SHAPE

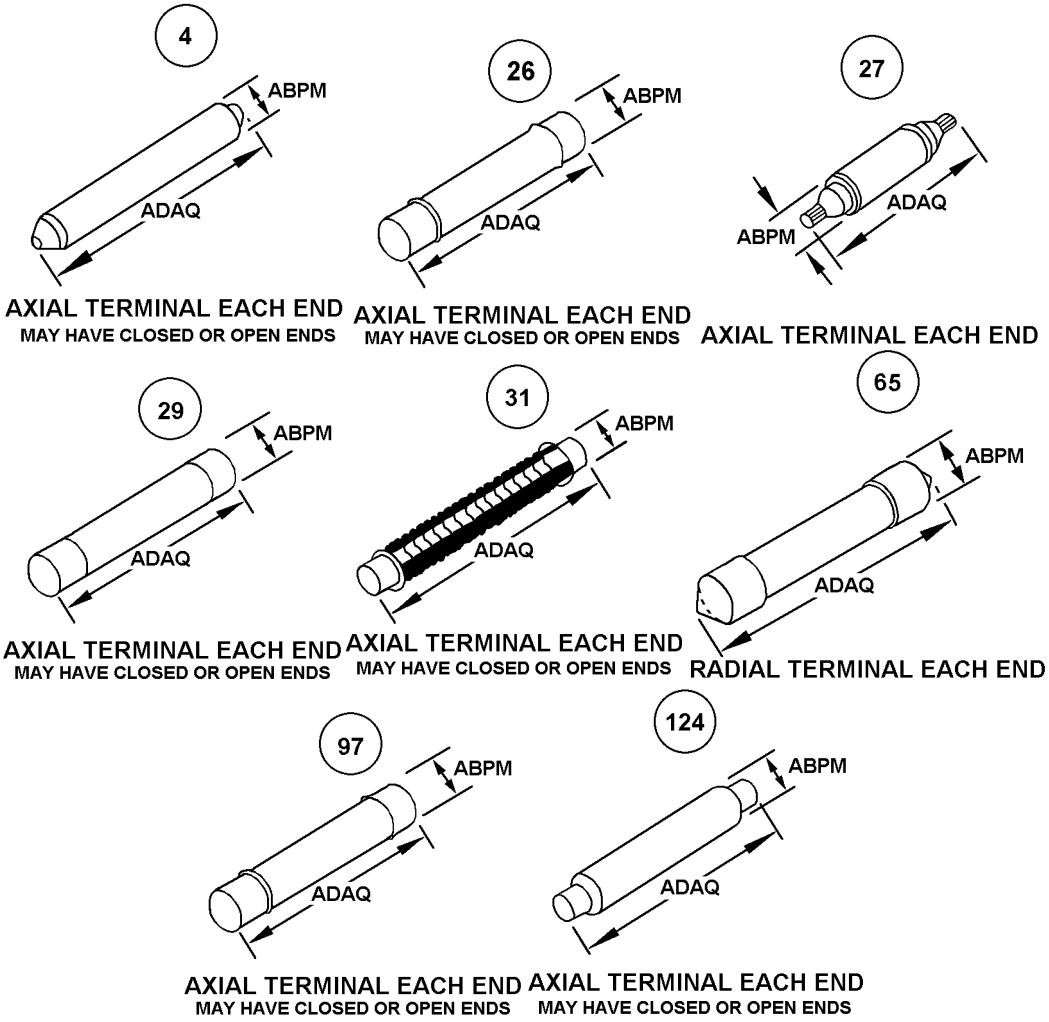
(WITH THREADED TERMINALS)



SECTION F

CYLINDRICAL SHAPE

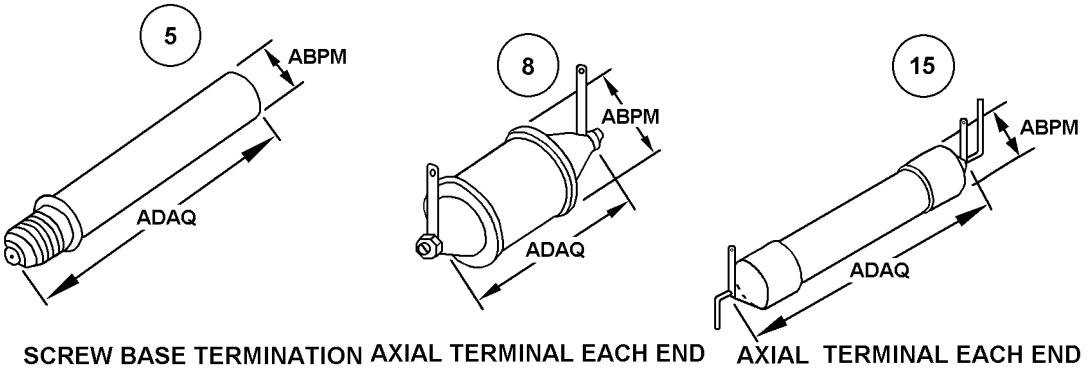
(WITH FERRULE TERMINALS)



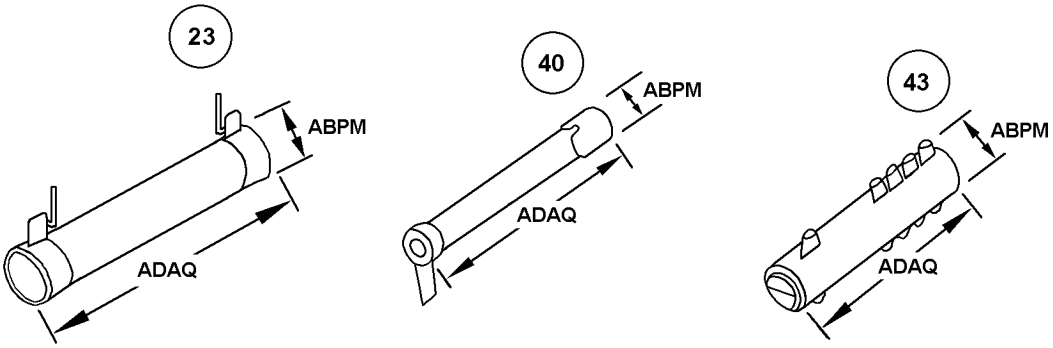
SECTION G

CYLINDRICAL SHAPE

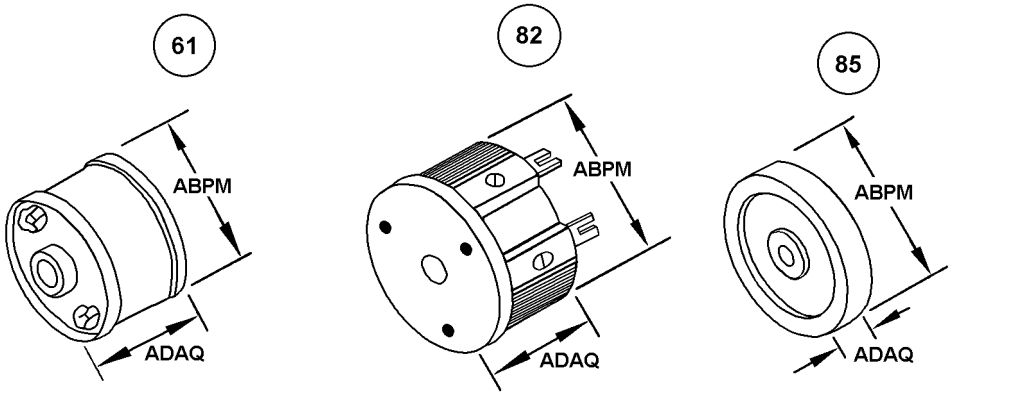
(MISCELLANEOUS TERMINAL TYPES)



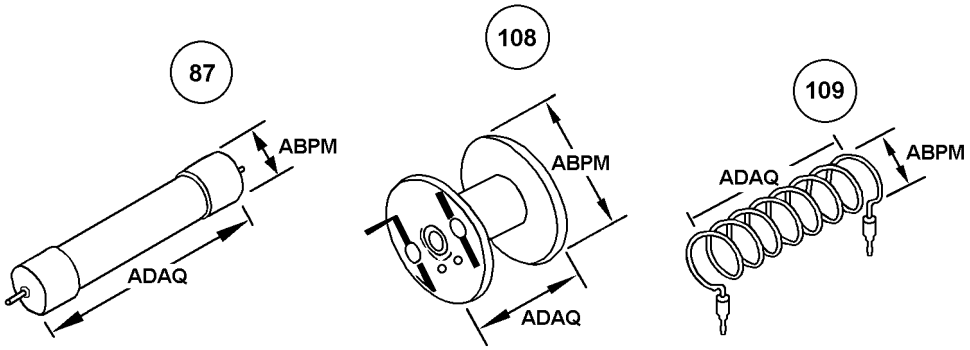
SCREW BASE TERMINATION AXIAL TERMINAL EACH END AXIAL TERMINAL EACH END



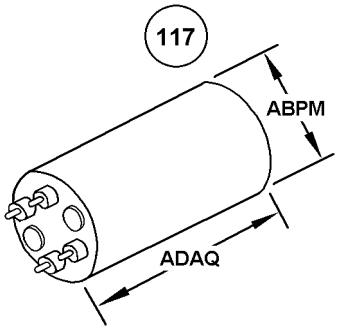
RADIAL TERMINAL EACH END AXIAL AND RADIAL TERMINALS RADIAL TERMINALS



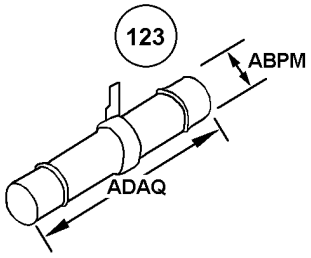
AXIAL TERMINALS ONE END AXIAL TERMINALS ONE END CONCENTRIC TERMINALS



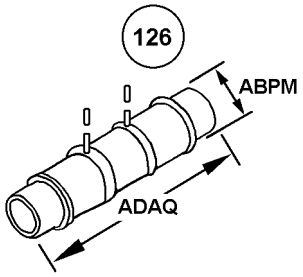
AXIAL TERMINAL EACH END TERMINALS ONE END RADIAL TERMINAL EACH END



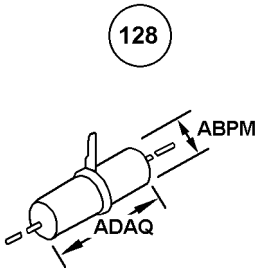
AXIAL TERMINALS ONE END



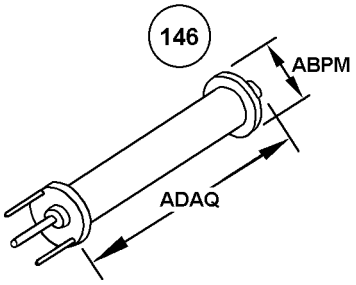
AXIAL END TERMINATIONS, RADIAL TAP TERMINAL(S)



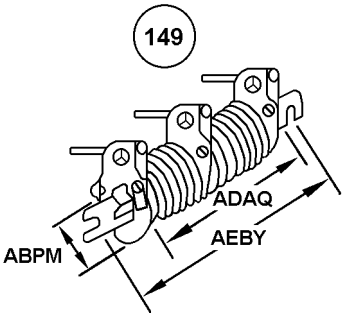
AXIAL END TERMINATIONS, RADIAL TAP TERMINAL(S)



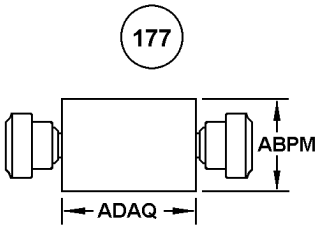
AXIAL TERMINAL EACH END



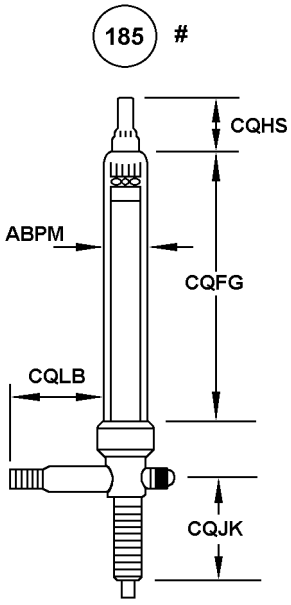
AXIAL TERMINALS ONE END



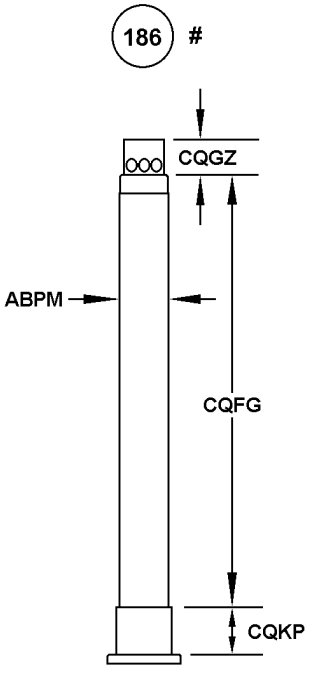
RADIAL TERMINALS



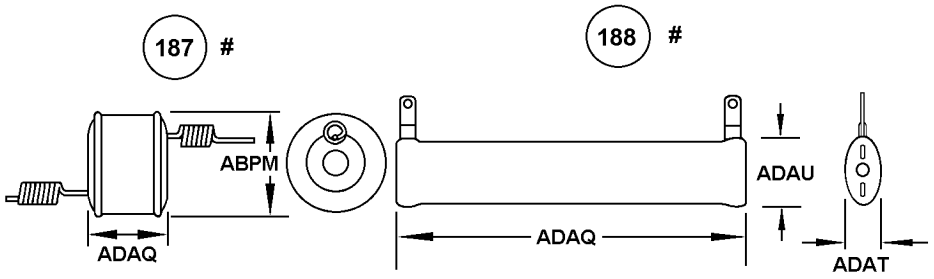
AXIAL TERMINAL EACH END
CONTOUR OF TERMINALS MAY VARY



HIGH FREQUENCY USE
LIQUID COOLED

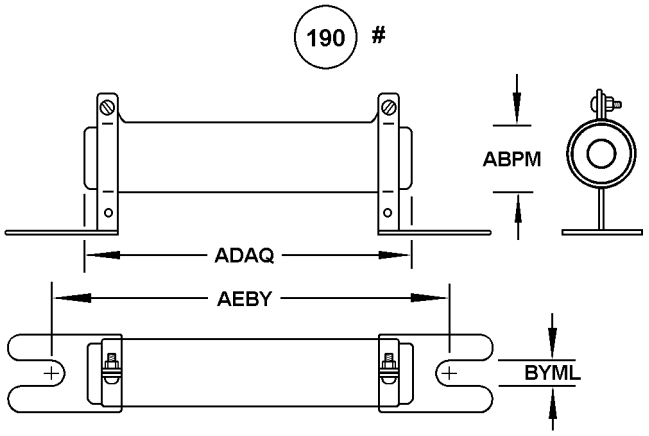


HIGH FREQUENCY USE

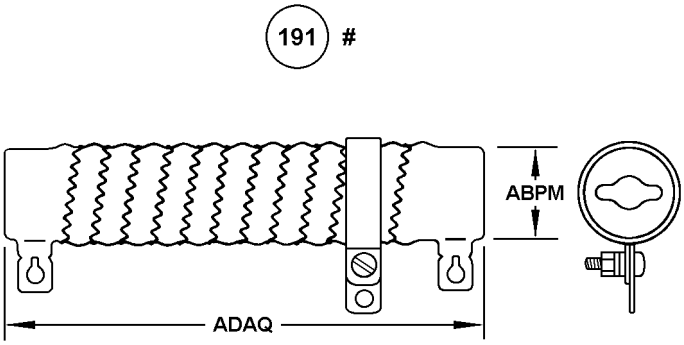


AXIAL TERMINAL EACH END

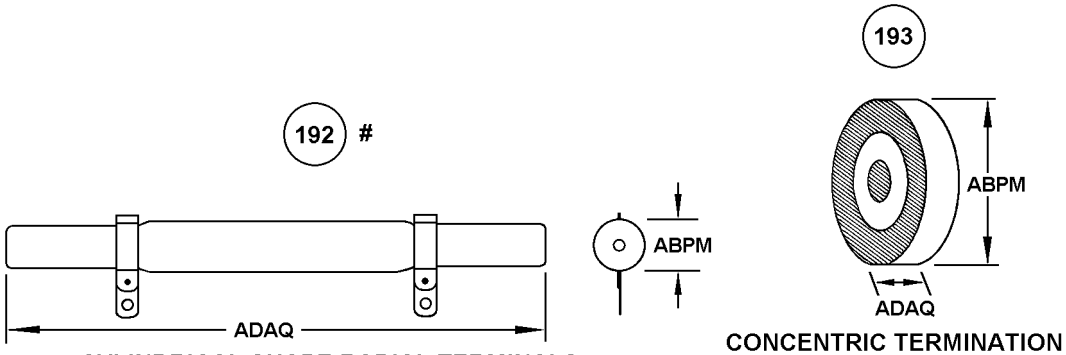
FLATTENED TERMINALS ONE EDGE



CYLINDRICAL SHAPE TERMINAL EACH END

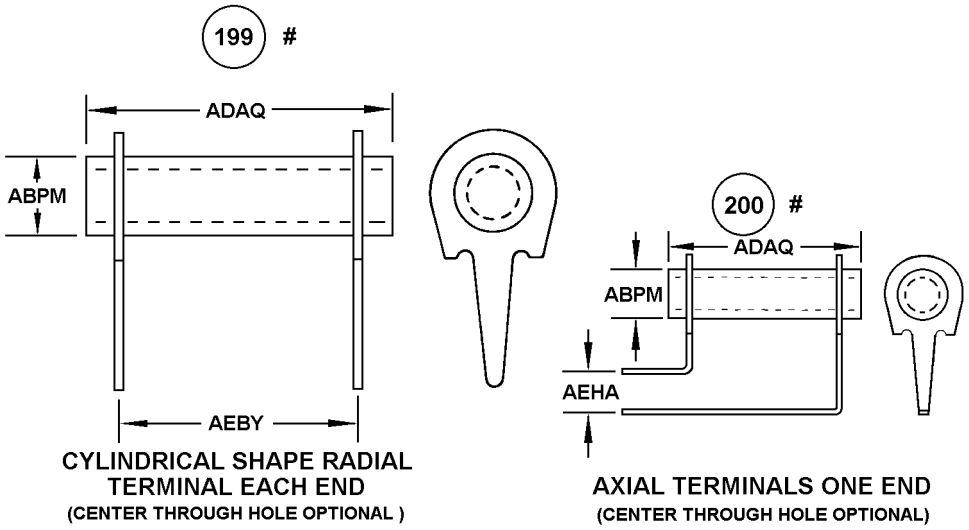


CYLINDRICAL SHAPE RADIAL TERMINALS



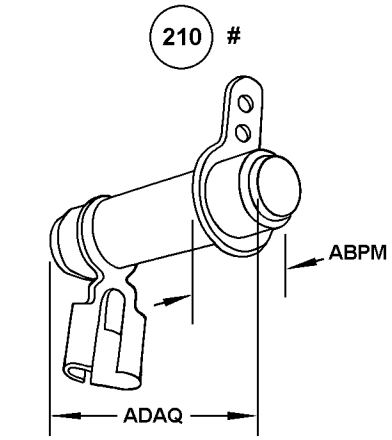
CYLINDRICAL SHAPE RADIAL TERMINALS

CONCENTRIC TERMINATION PADS



CYLINDRICAL SHAPE RADIAL TERMINAL EACH END
(CENTER THROUGH HOLE OPTIONAL)

AXIAL TERMINALS ONE END
(CENTER THROUGH HOLE OPTIONAL)

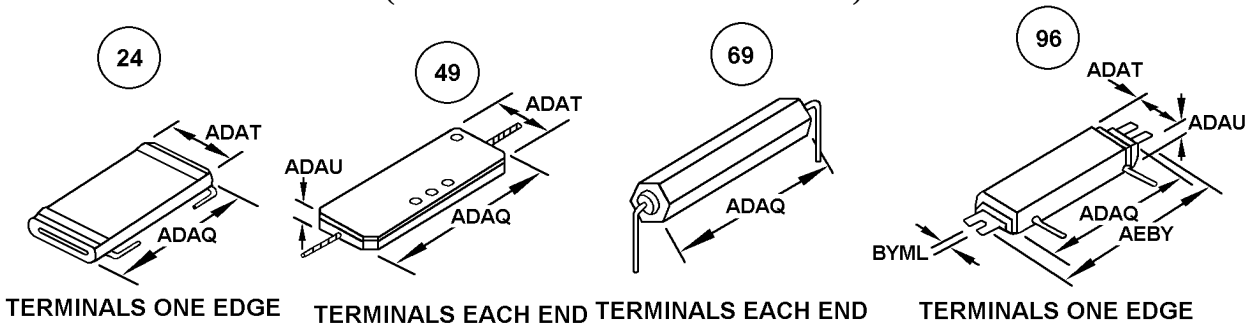


OPPOSING RADIAL TERMINALS
EACH END

SECTION H

RECTANGULAR SHAPE

(WITH WIRE LEAD TERMINALS)

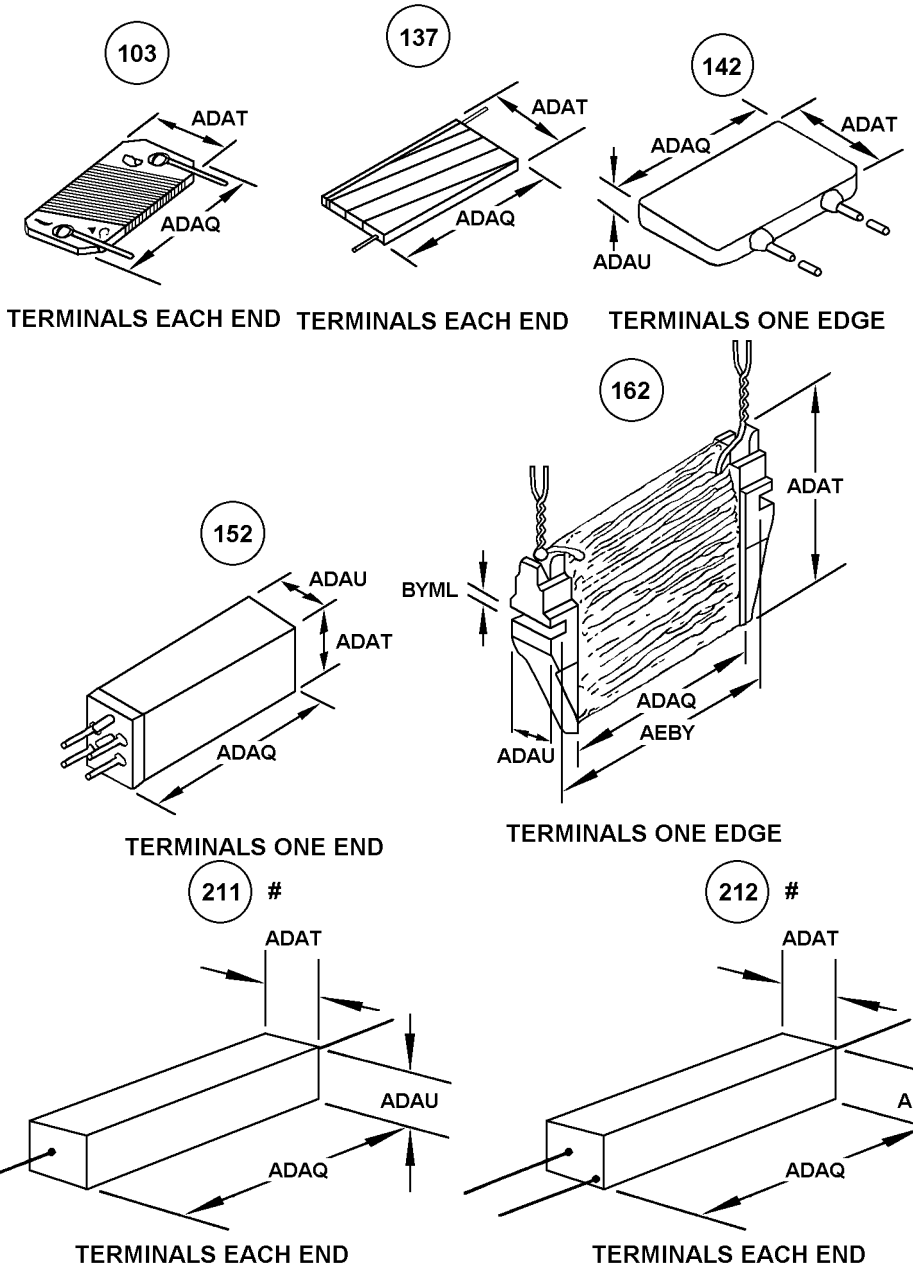


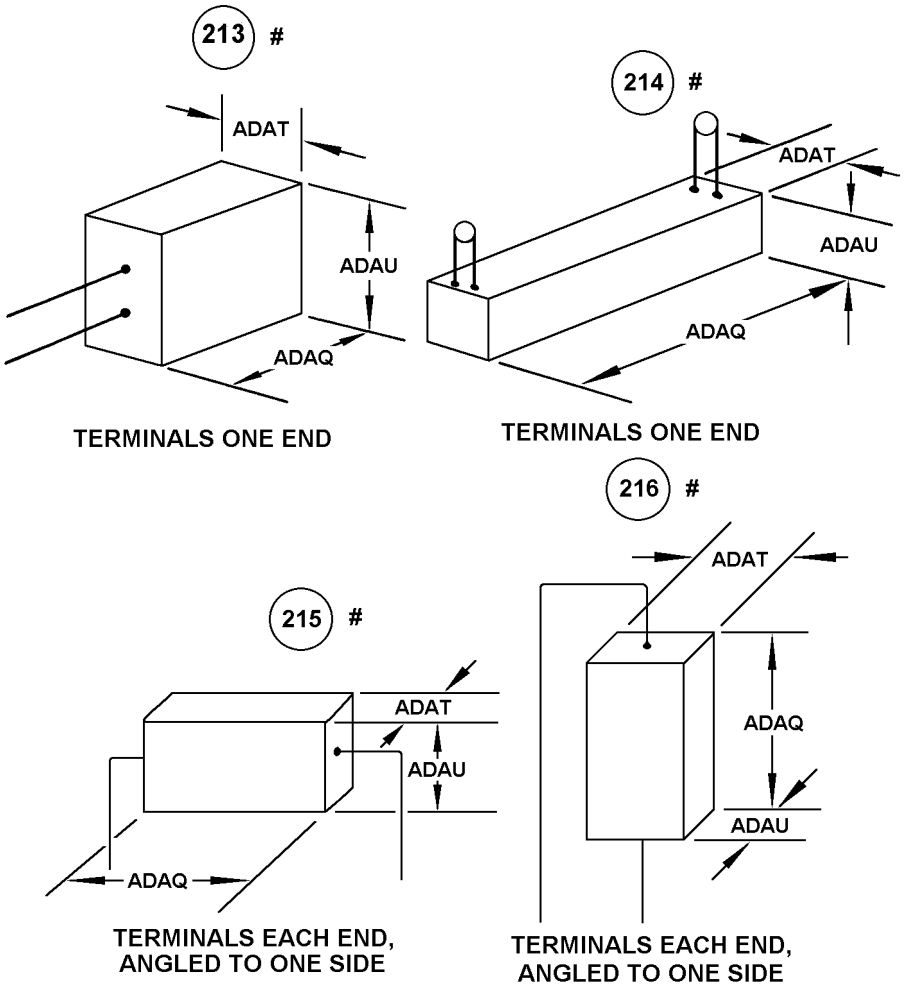
TERMINALS ONE EDGE

TERMINALS EACH END

TERMINALS EACH END

TERMINALS ONE EDGE

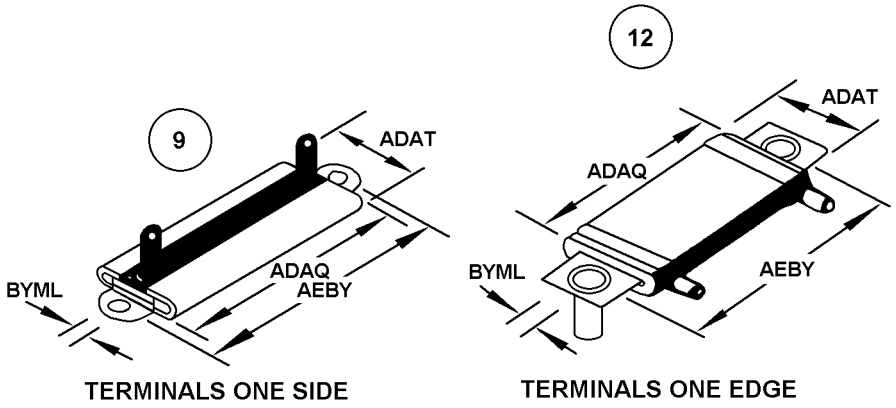

103
ADAT
ADAQ
TERMINALS EACH END
137
ADAT
ADAQ
TERMINALS EACH END
142
ADAT
ADAQ
ADAU
TERMINALS ONE EDGE
162
ADAT
BYML
ADAQ
AEBY
ADAU
TERMINALS ONE EDGE
152
ADAU
ADAT
ADAQ
TERMINALS ONE END
211 #
ADAT
ADAU
ADAQ
TERMINALS EACH END
212 #
ADAT
ADAU
ADAQ
TERMINALS EACH END

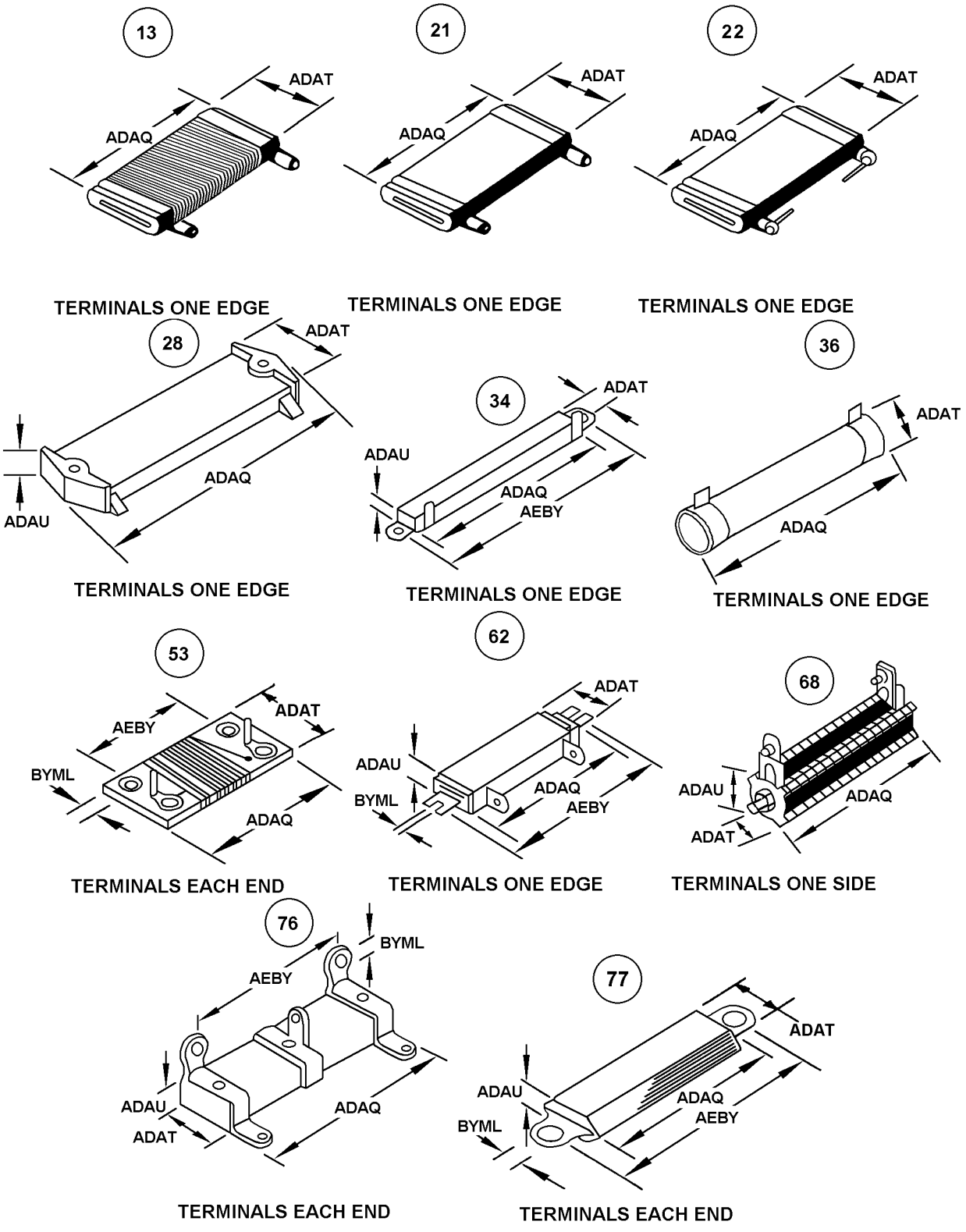


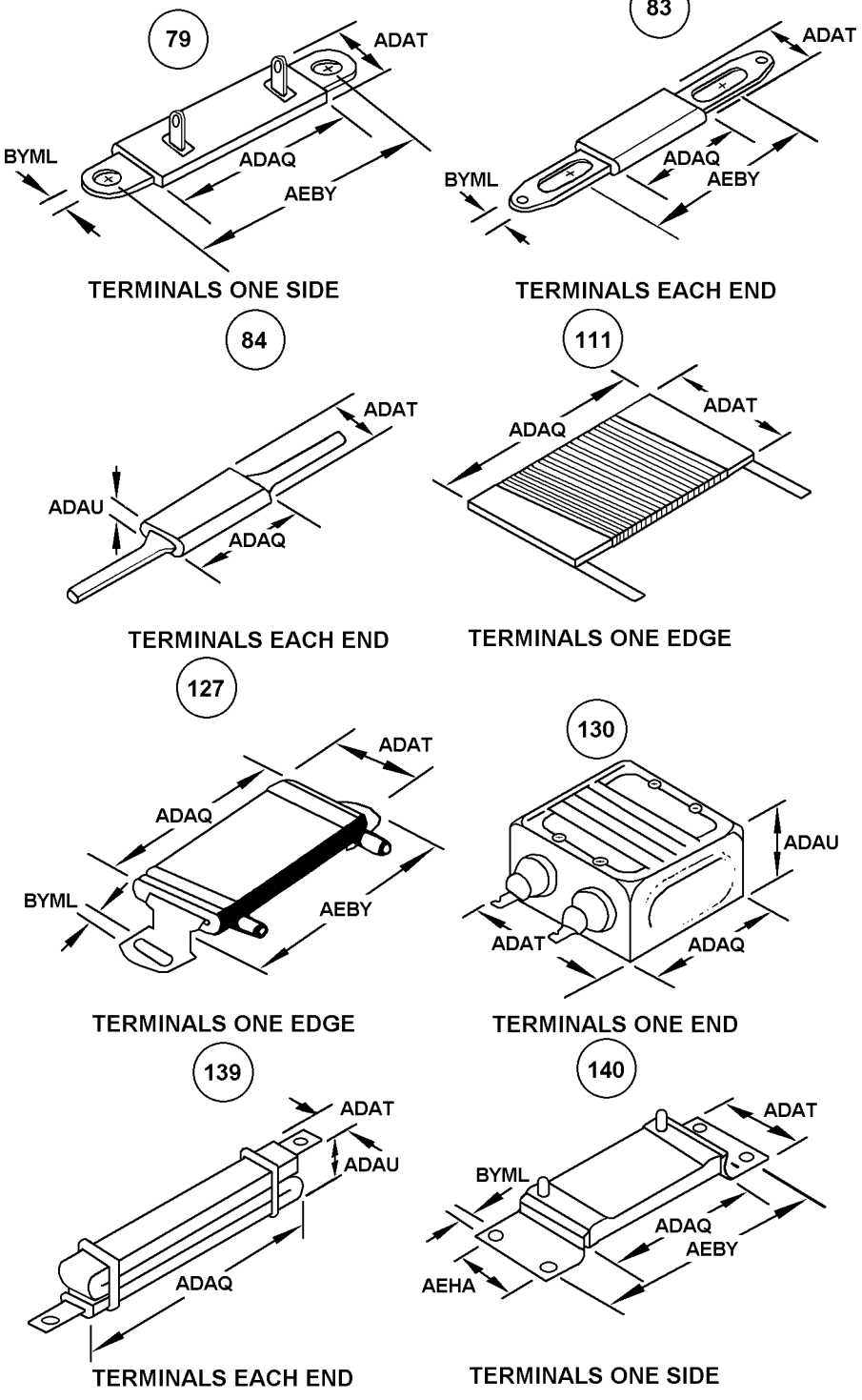
SECTION J

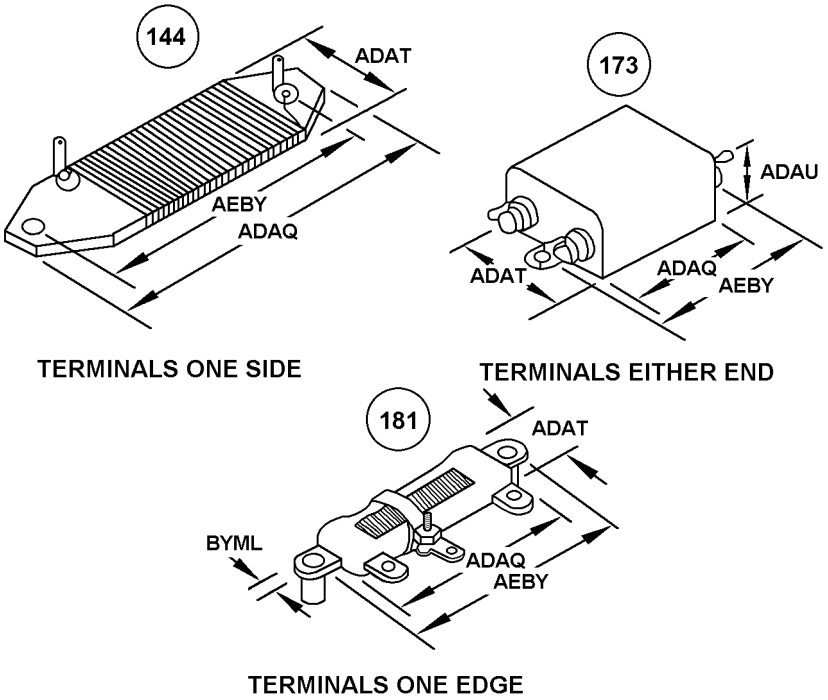
RECTANGULAR SHAPE

(WITH TAB TERMINALS)




13
ADAT
ADAQ
TERMINALS ONE EDGE
21
ADAT
ADAQ
TERMINALS ONE EDGE
22
ADAT
ADAQ
TERMINALS ONE EDGE
28
ADAT
ADAQ
ADAU
TERMINALS ONE EDGE
34
ADAT
ADAU
ADAQ
AEBY
TERMINALS ONE EDGE
36
ADAT
ADAQ
TERMINALS ONE EDGE
53
AEBY
ADAT
BYML
ADAQ
TERMINALS EACH END
62
ADAT
ADAU
BYML
ADAQ
AEBY
TERMINALS ONE EDGE
68
ADAU
ADAQ
ADAT
TERMINALS ONE SIDE
76
BYML
AEBY
ADAU
ADAQ
ADAT
TERMINALS EACH END
77
ADAT
ADAU
ADAQ
AEBY
BYML
TERMINALS EACH END

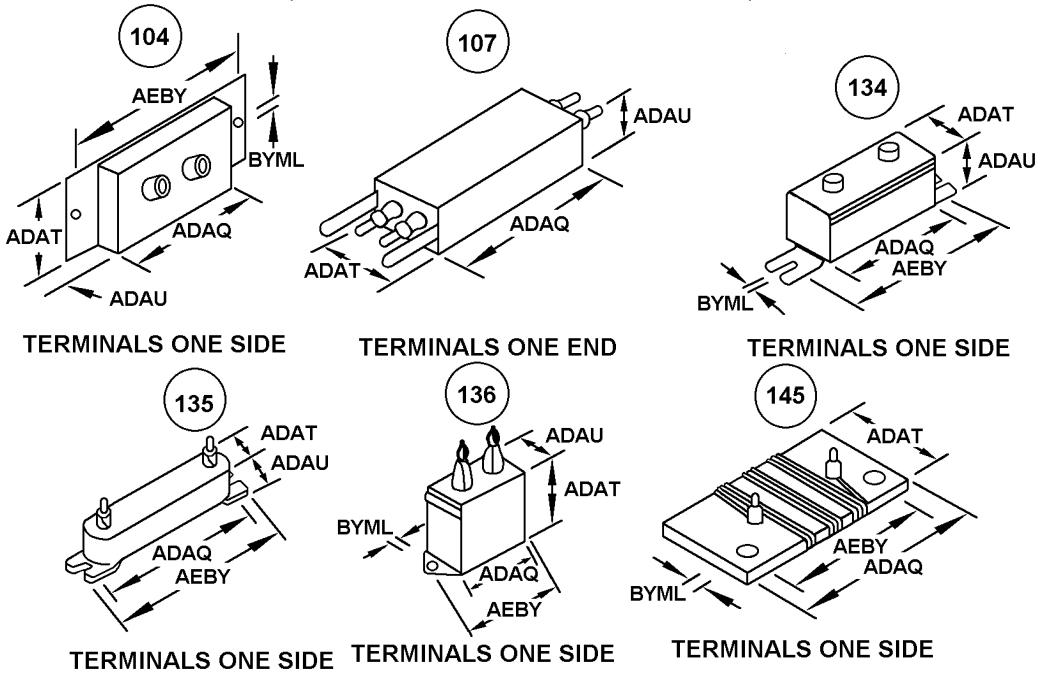

79
ADAT
BYML
ADAQ
AEBY
TERMINALS ONE SIDE
83
ADAT
BYML
ADAQ
AEBY
TERMINALS EACH END
84
ADAT
ADAU
ADAQ
TERMINALS EACH END
111
ADAQ
ADAT
TERMINALS ONE EDGE
127
ADAT
ADAQ
BYML
AEBY
TERMINALS ONE EDGE
130
ADAU
ADAT
ADAQ
TERMINALS ONE END
139
ADAT
ADAU
ADAQ
TERMINALS EACH END
140
ADAT
BYML
ADAQ
AEBY
AEHA
TERMINALS ONE SIDE



SECTION K

RECTANGULAR SHAPE

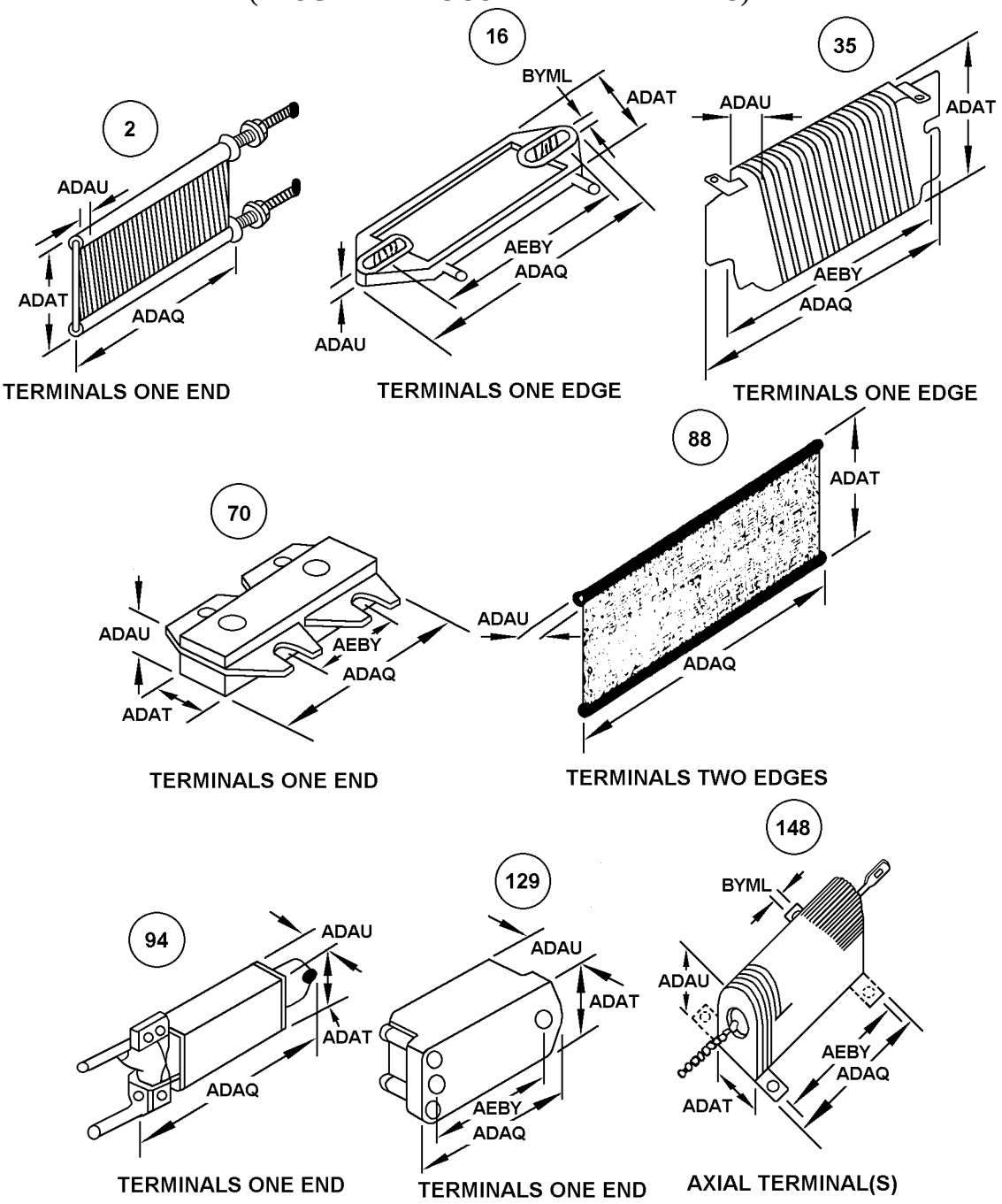
(WITH THREADED TERMINALS)

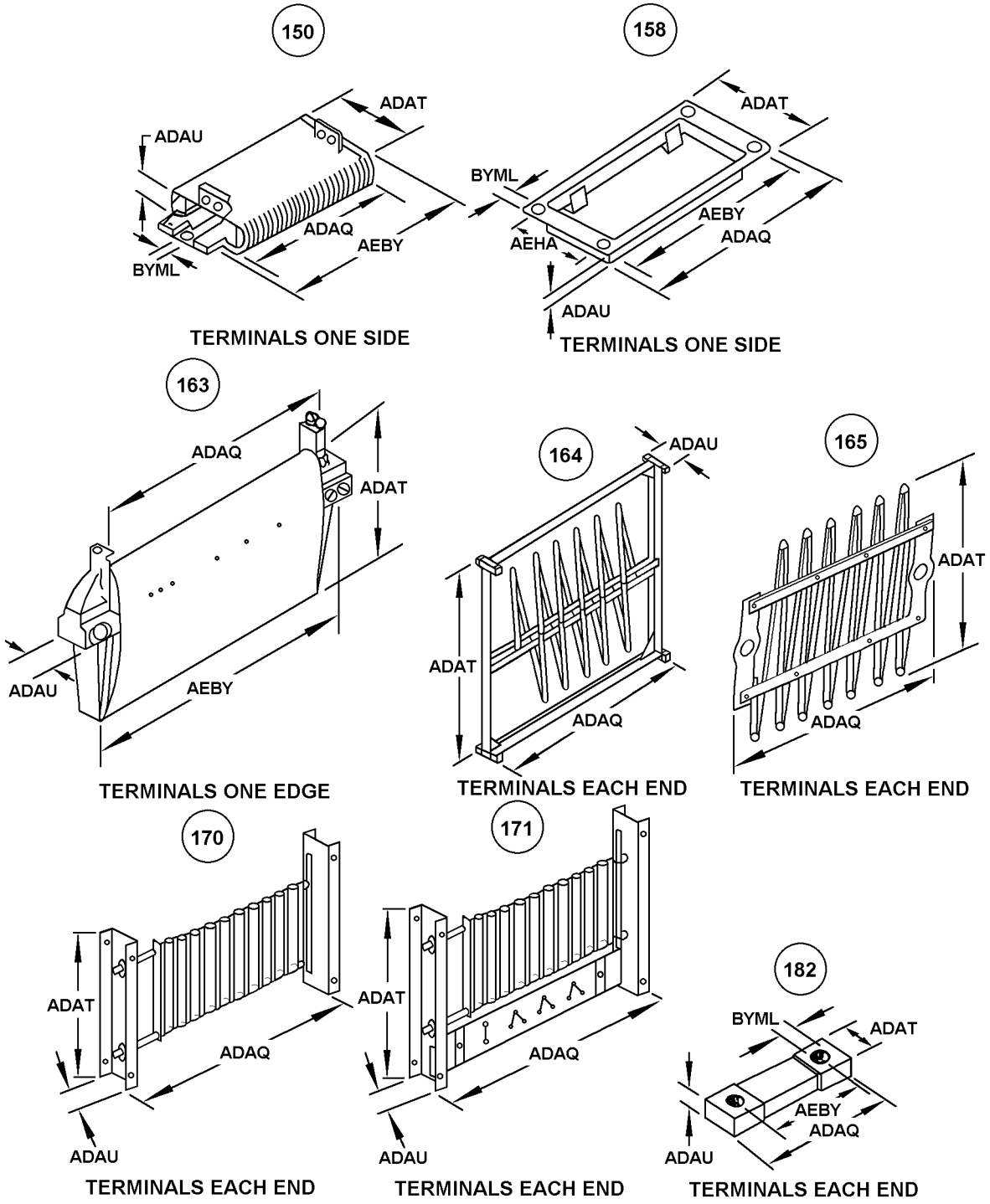


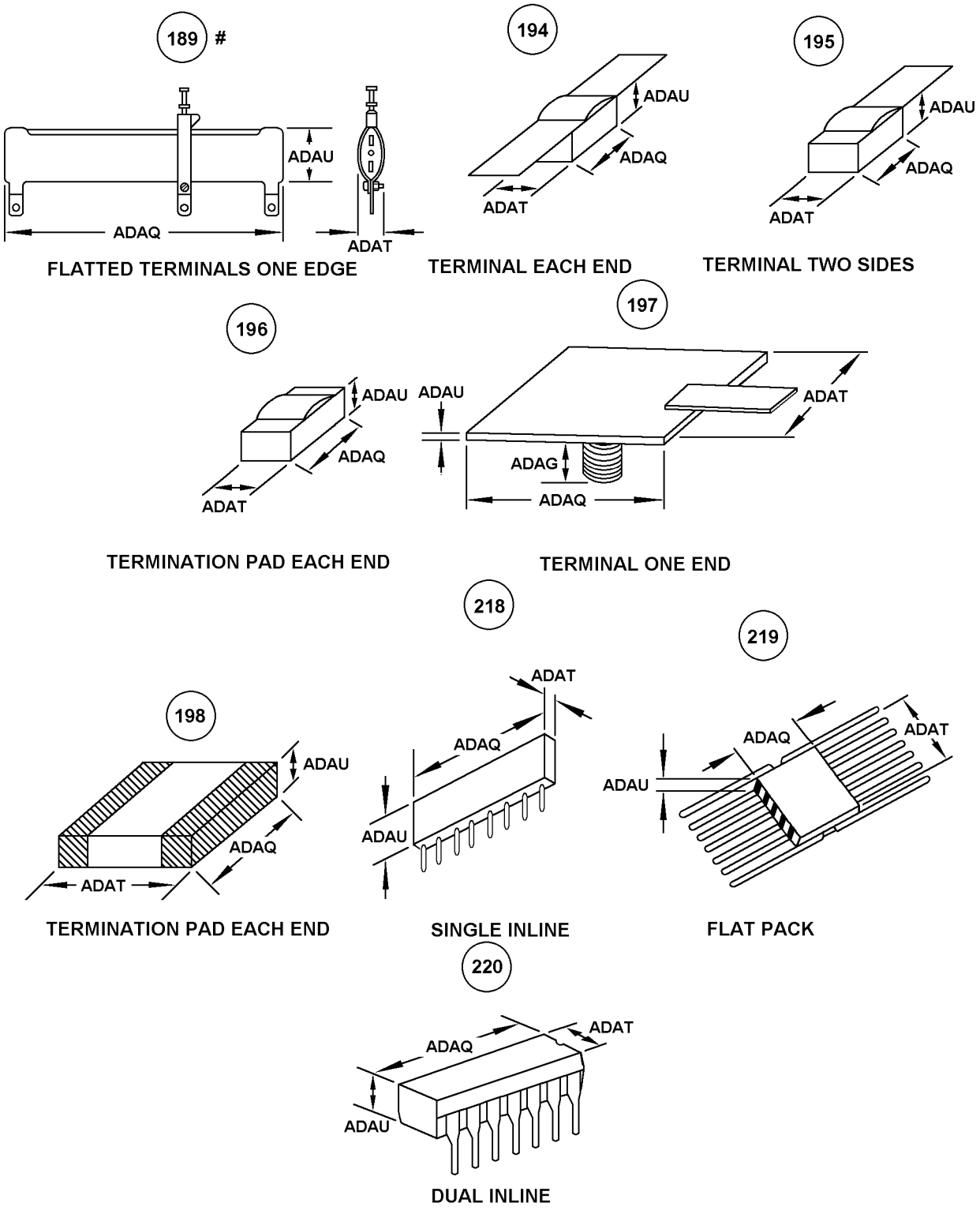
SECTION L

RECTANGULAR SHAPE

(MISCELLANEOUS TERMINAL TYPES)



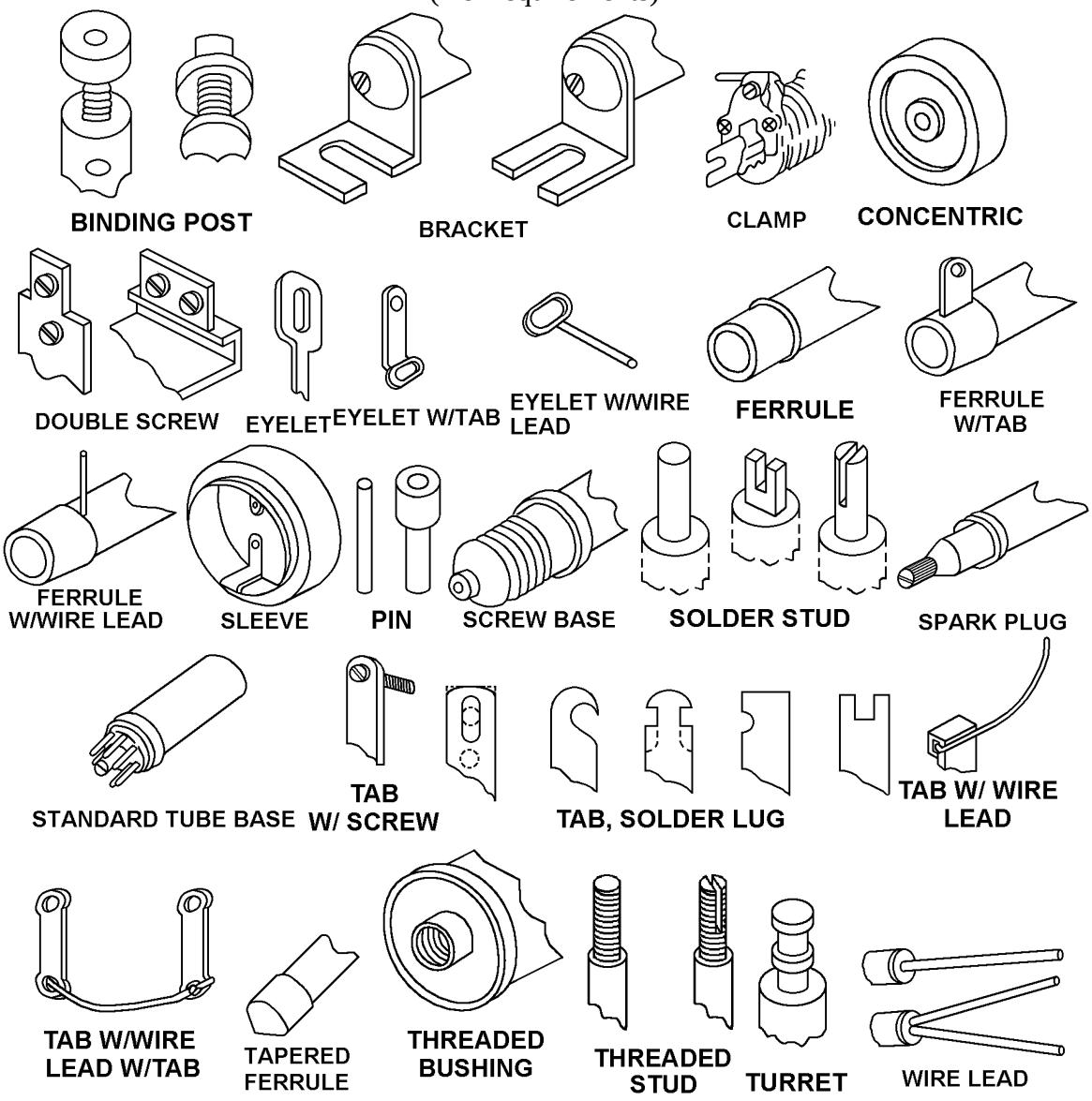

150
ADAT
ADAU
ADAQ
AEBY
BYML
TERMINALS ONE SIDE
158
ADAT
BYML
AEBY
AEHA
ADAQ
ADAU
TERMINALS ONE SIDE
163
ADAQ
ADAT
ADAU
AEBY
TERMINALS ONE EDGE
164
ADAU
ADAT
ADAQ
TERMINALS EACH END
165
ADAT
ADAQ
TERMINALS EACH END
170
ADAT
ADAQ
ADAU
TERMINALS EACH END
171
ADAT
ADAQ
ADAU
TERMINALS EACH END
182
BYML
ADAT
AEBY
ADAQ
ADAU
TERMINALS EACH END

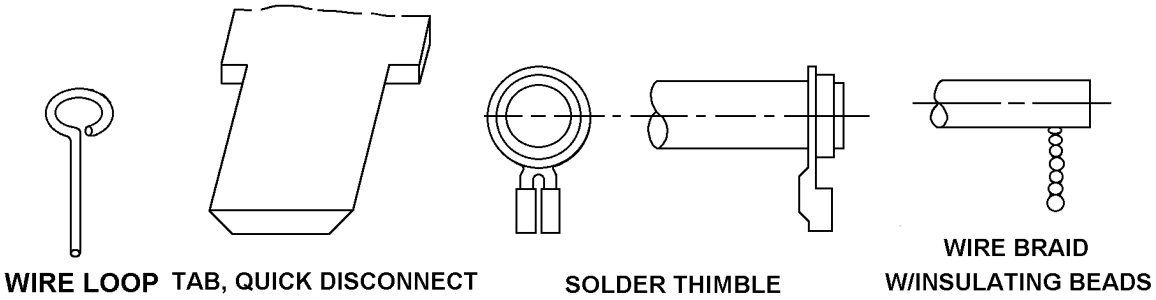

189 #
ADAU
ADAQ
ADAT
FLATTED TERMINALS ONE EDGE
194
ADAU
ADAQ
ADAT
TERMINAL EACH END
195
ADAU
ADAQ
ADAT
TERMINAL TWO SIDES
196
ADAU
ADAQ
ADAT
TERMINATION PAD EACH END
197
ADAU
ADAT
ADAG
ADAQ
TERMINAL ONE END
198
ADAU
ADAQ
ADAT
TERMINATION PAD EACH END
218
ADAT
ADAQ
ADAU
SINGLE INLINE
219
ADAQ
ADAT
ADAU
FLAT PACK
220
ADAQ
ADAT
ADAU
DUAL INLINE

REFERENCE DRAWING GROUP B

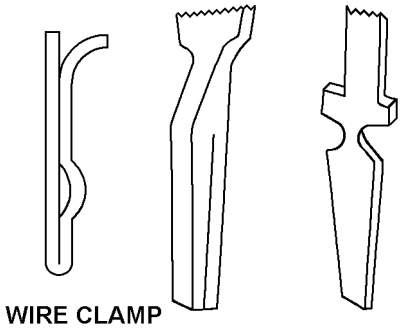
TERMINAL TYPES

(No Requirements)





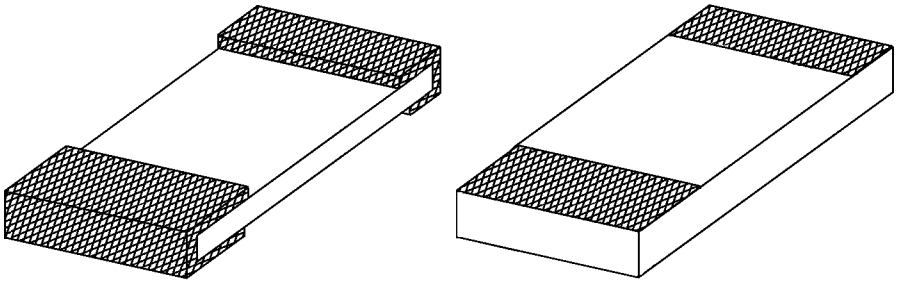
WIRE LOOP TAB, QUICK DISCONNECT SOLDER THIMBLE WIRE BRAID W/INSULATING BEADS



WIRE CLAMP PIN CLAMP

BD - TERMINAL TYPE PER BODY STYLE

(THIS REPLY CODE WILL BE USED FOR THOSE ITEMS HAVING TERMINALS THAT ARE NOT APPROPRIATELY IDENTIFIABLE TO TYPES LISTED ABOVE, BUT CAN BE ASSOCIATED WITH BODY STYLES, SUCH AS ARE SHOWN IN APPENDIX B, REFERENCE DRAWING GROUP A, SECTIONS G AND L (WITH MISCELLANEOUS TERMINALS.))



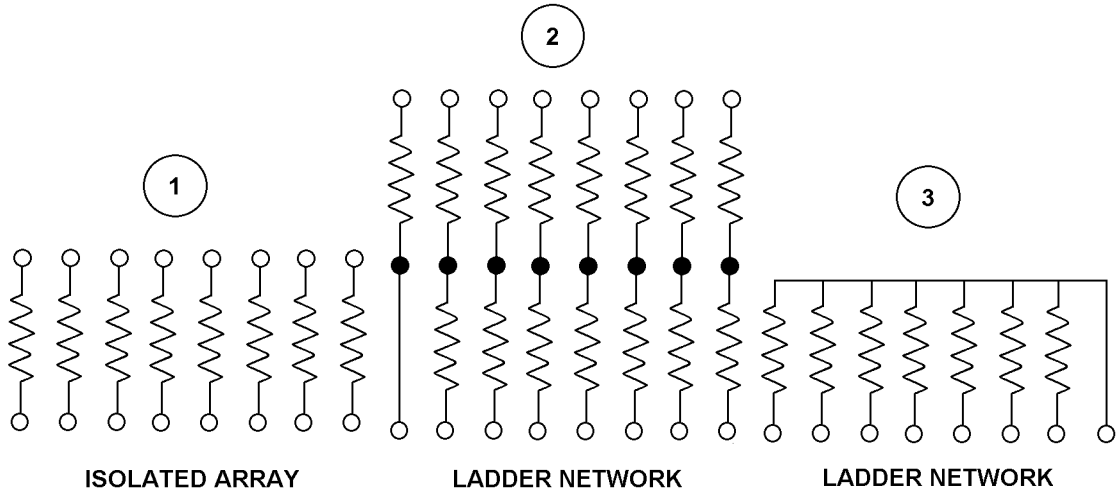
WRAPAROUND ONE SURFACE

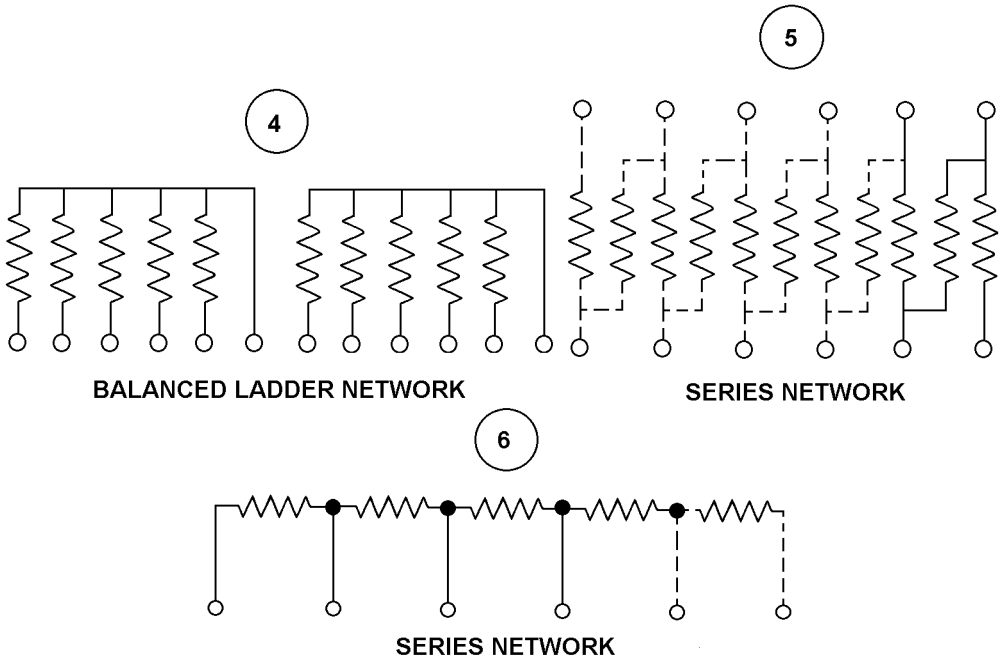
REFERENCE DRAWING GROUP C

SCHEMATIC DIAGRAMS

The maximum number of resistors (or resistor elements) in the item being described is not limited to the quantity illustrated in these schematics. The item may have any quantity of resistors providing the quantity is equal to or greater than that depicted by the solid lines in the drawings.

NOTE: Schematic 4 is limited to those items having an equal quantity of resistors in each half of the network.




5
4
BALANCED LADDER NETWORK
SERIES NETWORK
6
SERIES NETWORK

Technical Data Tables

SPECIFICATION STYLE CROSS-REFERENCE

MILITARY SPECIFICATION STYLE	STYLE MILITARY SPECIFICATION	MILITARY SPECIFICATION STYLE	STYLE MILITARY SPECIFICATION
MIL-R-11	RC	MIL-R-22684	RL
MIL-R-26	RW	MIL-R-39005	RBR
MIL-R-29	MF	MIL-R-39007	RWR
MIL-R-93	RB	MIL-R-39008	RCR
MIL-R-10509	RN	MIL-R-39009	RER
MIL-R-11804	RD	MIL-R-39017	RLR
MIL-R-14293	RM	MIL-R-55182	RNR
MIL-R-18546	RE		
MF	MIL-R-29	RL	MIL-R-22684
RB	MIL-R-93	RLR	MIL-R-39017
RBR	MIL-R-39005	RM	MIL-R-14293
RC	MIL-R-11	RN	MIL-R-10509
RCR	MIL-R-39008	RNR	MIL-R-55182
RD	MIL-R-11804	RW	MIL-R-26
RE	MIL-R-18546	RWR	MIL-R-39007
RER	MIL-R-39009		

STANDARD FRACTION TO DECIMAL CONVERSION CHART

4ths	8ths	16ths	32nds	64ths	To 3	To 4	4ths	8ths	16ths	32nds	64ths	To 3	To 4
				1/64	.016	.0156					33/64	.516	.5156
			1/32	-----	.031	.0312				17/32	------	.531	.5312
				3/64	.047	.0469					35/64	.547	.5469
		1/16	-----		.062	.0625			9/16	-----	-----	.562	.5625
				5/64	.078	.0781					37/64	.578	.5781
			3/32	-----	.094	.0938				19/32	------	.594	.5938
				7/64	.109	.1094					39/64	.609	.6094
	1/8	-----	-----	-----	.125	.1250		5/8	-----	-----	-----	.625	.6250
				9/64	.141	.1406					41/64	.641	.6406
			5/32	-----	.156	.1562				21/32	------	.656	.6562
				11/64	.172	.1719					43/64	.672	.6719
		3/16	-----	-----	.188	.1875			11/16	-----	-----	.688	.6875
				13/64	.203	.2031					45/64	.703	.7031
			7/32	------	.219	.2188				23/32	------	.719	.7188
				15/64	.234	.2344					47/64	.734	.7344
1/4	-----	-----	-----	-----	.250	.2500	3/4	-----	-----	-----	-----	.750	.7500
				17/64	.266	.2656					49/64	.766	.7656
			9/32	------	.281	.2812				25/32	------	.781	.7812
				19/64	.297	.2969					51/64	.797	.7969
		5/16	-----	-----	.312	.3125			13/16	-----	-----	.812	.8125
				21/64	.328	.3281					53/64	.828	.8281
			11/32	------	.344	.3438				27/32	------	.844	.8438
				23/64	.359	.3594					55/64	.859	.8594
	3/8	-----	-----	-----	.375	.3750		7/8	-----	-----	-----	.875	.8750
				25/64	.391	.3906					57/64	.891	.8906
			13/32	------	.406	.4062				29/32	------	.906	.9062
				27/64	.422	.4219					59/64	.922	.9219
		7/16	-----	-----	.438	.4375			15/16	-----	-----	.938	.9375
				29/64	.453	.4531					61/64	.953	.9531
			15/32	------	.469	.4688				31/32	------	.969	.9688
				31/64	.484	.4844					63/64	.984	.9844
					.500	.5000						1.000	1.0000

CELSIUS-FAHRENHEIT CONVERSION TABLE

CONVERTED TO CELSIUS	TEMP READING	CONVERTED TO FAHRENHEIT
-62.2	-80	-112.0
-56.7	-70	-94.0
-51.1	-60	-76.0
-45.6	-50	-58.0
-40.0	-40	-40.0
-34.4	-30	-22.0
-31.7	-25	-13.0
-28.9	-20	-4.0
-26.1	-15	+5.0
-23.3	-10	14.0
-20.6	-5	23.0
-17.8	0	32.0
-15.0	5	41.0
-12.22	10	50.0
-9.44	15	59.0
-6.67	20	68.0
-3.89	25	77.0
-1.11	30	86.0
1.67	35	95.0
4.44	40	104.0
7.22	45	113.0
10.00	50	122.0
12.78	55	131.0
15.56	60	140.0
18.33	65	149.0
21.11	70	158.0
23.89	75	167.0
26.67	80	176.0
29.44	85	185.0
32.22	90	194.0
35.00	95	203.0
37.78	100	212.0
40.56	105	221.0
43.33	110	230.0
46.11	115	239.0
48.89	120	248.0
51.67	125	257.0
54.44	130	266.0
57.22	135	275.0
60.00	140	284.0

65.56	150	302.0
71.11	160	320.0
76.67	170	338.0
82.22	180	356.0
87.78	190	374.0
93.33	200	392.0
98.89	210	410.0
104.44	220	428.0
110.00	230	446.0
115.56	240	464.0
121.11	250	482.0
126.67	260	500.0
132.22	270	518.0
137.78	280	536.0
143.33	290	554.0
148.89	300	572.0
154.44	310	590.0
160.00	320	608.0
165.66	330	626.0
171.11	340	644.0
176.67	350	662.0
182.22	360	680.0
187.78	370	698.0
193.33	380	716.0
198.89	390	734.0
204.44	400	752.0
210.00	410	770.0
215.56	420	788.0
221.11	430	806.0
226.67	440	824.0
232.22	450	842.0
237.78	460	860.0
243.33	470	878.0
248.89	480	896.0
254.44	490	914.0
260.00	500	932.0
265.56	510	950.0
271.11	520	968.0
276.67	530	986.0
282.22	540	1004.0
287.78	550	1022.0

The middle column of figures contains the reading (|SDF or |SDC) to be converted. If converting from degrees Fahrenheit to degrees Celsius, read the Celsius equivalent in the column headed

"Converted to Celsius". If converting from Celsius to Fahrenheit, read the Fahrenheit equivalent in the column headed "Converted to Fahrenheit".

CONVERSION OF TEMPERATURE CHARACTERISTIC OF RESISTANCE TO TEMPERATURE COEFFICIENT OF RESISTANCE IN PARTS PER MILLION (PPM) PER DEGREE CELSIUS

Temperature characteristic of resistance

Temperature Characteristic of Resistance = (100|gDR) / R

Where |gDR is the change in resistance between the two specified ambient tempertures and R is the resistance value at the reference temperature.

Temperature coefficient of resistance

Temperature coefficient (ppm/|SDC) = 10,000 X (Temperature characteristic of resistance / |gDt)

Where |gDt is the algebraic difference, in degrees Celsius, between the reference temperature and the other specified ambient temperature.

Example:

Temperature characteristic of resistance 1\% (+20|SDC to +70|SDC)

|gDt = 70-20 = 50|SDC where 20 is the Reference Temperature.

Then Temperature coefficient (ppm/|SDC) = (10,000X1) / 50 = 200 ppm/|SDC

MATERIAL GAGE SIZE TO INCHES CONVERSION

GAGE NUMBER	AMERICAN OR B&S 1	U.S. STANDARD2	BIRMINGHAM OR STUBS3
0000000	.....	0.500	.....
000000	.....	0.469	.....
00000	.....	0.438	.....
0000	0.460	0.406	0.454
000	0.410	0.375	0.425
00	0.365	0.344	0.380
0	0.325	0.312	0.340
	0.289	0.281	0.300
2	0.258	0.263	0.284
3	0.229	0.250	0.259
4	0.204	0.234	0.238
5	0.182	0.219	0.220
6	0.162	0.203	0.203
7	0.114	0.188	0.180
8	0.128	0.172	0.165
9	0.114	0.156	0.148
10	0.102	0.141	0.134
11	0.091	0.125	0.120
12	0.081	0.109	0.109
13	0.072	0.094	0.095
14	0.064	0.078	0.083
15	0.057	0.070	0.072
16	0.051	0.062	0.065
17	0.045	0.056	0.058
18	0.040	0.050	0.049
19	0.036	0.044	0.042
20	0.032	0.038	0.035
21	0.028	0.034	0.032
22	0.025	0.031	0.028
23	0.023	0.028	0.025
24	0.020	0.025	0.022
25	0.018	0.022	0.020
26	0.016	0.019	0.018
27	0.014	0.017	0.016
28	0.013	0.016	0.014
29	0.011	0.014	0.013
30	0.010	0.012	0.012
31	0.009	0.011	0.010
32	0.008	0.010	0.009

33	0.007	0.009	0.008
34	0.006	0.008	0.007
35	0.006	0.007	0.005
36	0.005	0.007	0.004
37	0.004	0.006	.....
38	0.004	0.006	.....
39	0.004	.....	.....
40	0.003	.....	.....

1Used for aluminum, copper, brass and nonferrous alloy sheets, wire and rods.

2Used for iron, steel, nickel and ferrous alloy sheets, wire and rods.

3Used for seamless tubes; also by some manufacturers for coppoer and brass.

RESISTOR COLOR CODING

Color	BAND				
A	B	C	D	E	
Black	0	0	1	-	-
Brown	1	1	10	-	M
Red	2	2	100	(1)|m@ 2	P
Orange	3	3	1000	-	R
Yellow	4	4	10000	-	S
Green	5	5	100000	\M	-
Blue	6	6	1000000	-	-
Violet	7	7	(4) 10000000	-	-
Gray	8	8	(4) 100000000	-	-
White	9	9	---	-	(3)
Gold	-	-	0.1	|m@ 5	-
Silver	-	-	0.01	(2)|m@ 10	-

Example of color coding for composition type: 4300 ohms |m@ 5 percent, M failure rate level, Band A, yellow; Band B, orange; Band C, red; Band D, gold; Band E, brown.

Example of color coding for film type: 5600 ohms |m@ 2 percent, solderable leads. Band A, green; Band B, blue; Band C, red; Band D, red; Band E, white.

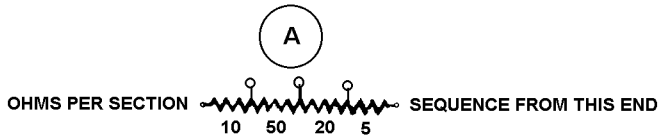
OUNCE TO DECIMAL OF A POUND CONVERSION CHART

OUNCES	POUNDS
1	0.062
2	0.125
3	0.188
4	0.250
5	0.312
6	0.375
7	0.438
8	0.500
9	0.562
10	0.625
11	0.688
12	0.750
13	0.812
14	0.875
15	0.938
16	1.000

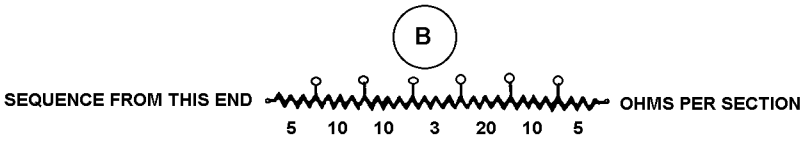
SECTION NOMINAL RESISTANCE RECORDING SEQUENCE

For a tapped resistance element, using Identified Secondary Address Coding, enter section resistance values in actual sequence from the end having the section of lowest ohmic value (Example A). If both end sections should have equal ohmic values, sequence from the end having the nearest section of lowest ohmic value (Example B). For a resistance element having a symmetrical arrangement of ohmic values (i.e., all sections have equal ohmic values; equal ohmic values for both end sections, for both sections adjacent to the end sections, etc.), the recording sequence may be initiated from either end (Example C).

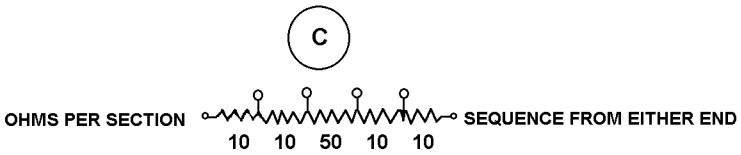
Examples:



CODED REPLY CQFD1AJQ5.000*
CQFD1BJQ20.000*
CQFD1CJQ50.000*
CQFD1DJQ10.000*



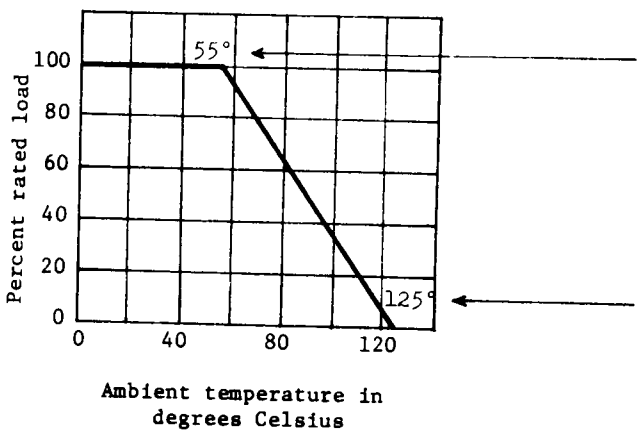
CODED REPLY CQFD1AJQ5.000*
CQFD1BJQ20.000*
CQFD1CJQ50.000*
CQFD1DJQ10.000*
CQFD1EJQ20.000*
CQFD1FJQ10.000*
CQFD1GJQ5.000*



CODED REPLY CQFD1AJQ10.000*
CQFD1BJQ10.000*
CQFD1CJQ50.000*
CQFD1DJQ10.000*
CQFD1EJQ10.000*

An item having two or more resistive elements not electrically connected (multi-element), or a multisection item that cannot be described by the instructions above, see a RESISTOR NETWORK, FIXED, FILM or RESISTOR NETWORK, FIXED, WIREWOUND.

TYPICAL TEMPERATURE DERATING GRAPH



IDENTIFIED SECONDARY ADDRESS CODING
(USE FOR APPLICABILITY KEY E ONLY)

1A - EACH RESISTOR
1B - LOWEST RESISTANCE VALUE
1C - INTERMEDIATE RESISTANCE VALUE
1D - HIGHEST RESISTANCE VALUE
1E - 1ST INTERMEDIATE RESISTANCE VALUE
1F - 2ND INTERMEDIATE RESISTANCE VALUE
1G - 3RD INTERMEDIATE RESISTANCE VALUE
1H - 4TH INTERMEDIATE RESISTANCE VALUE
1J - 5TH INTERMEDIATE RESISTANCE VALUE
1K - 6TH INTERMEDIATE RESISTANCE VALUE
1L - 7TH INTERMEDIATE RESISTANCE VALUE
1M - 8TH INTERMEDIATE RESISTANCE VALUE
1N - 9TH INTERMEDIATE RESISTANCE VALUE
1P - 10TH INTERMEDIATE RESISTANCE VALUE
1Q - 11TH INTERMEDIATE RESISTANCE VALUE
1R - 12TH INTERMEDIATE RESISTANCE VALUE
1S - 13TH INTERMEDIATE RESISTANCE VALUE
1T - 14TH INTERMEDIATE RESISTANCE VALUE
1U - 15TH INTERMEDIATE RESISTANCE VALUE
1V - 16TH INTERMEDIATE RESISTANCE VALUE
1W - 17TH INTERMEDIATE RESISTANCE VALUE
1Y - 18TH INTERMEDIATE RESISTANCE VALUE
1X - TOTAL RESISTANCE

IDENTIFIED SECONDARY ADDRESS CODING

1A - FIRST TEMP COEFFICIENT
1B - SECOND TEMP COEFFICIENT
1C - THIRD TEMP COEFFICIENT

IDENTIFIED SECONDARY ADDRESS CODING

1A - TEMP RANGE OF FIRST TEMP COEFFICIENT
1B - TEMP RANGE OF SECOND TEMP COEFFICIENT
1C - TEMP RANGE OF THIRD TEMP COEFFICIENT

ALLOCATION OF MINIMUM OPERATING TEMPERATURE TO 1ST DESIGNATOR

1st Designator	Minimum Operating Temperature
A	
B	
C	
D	
E	-65
F	-55
G	-40
H	-25
J	-10
K	0
L	5

ALLOCATION OF MAXIMUM OPERATING TEMPERATURE TO 2ND DESIGNATOR

2nd Designator	Maximum Operating Temperature
A	400
B	350
C	300
D	250
E	200

F	180
G	170
H	155
J	140
K	125
L	110
M	100
N	90
P	85
Q	80
R	75
S	70
T	65
U	60
V	55
W	50
Y	40

ALLOCATION OF PERMISSIBLE HUMIDITY LOAD TO 3RD DESIGNATOR

3rd Designator	Permissible Humidity Load		
Relative Humidity		Dew Cover	
Maximum Value	Annual Average		
A and B	- - - - - - - - - - - - - - - - - - - left open - - - - - - - - - - - - - - - - - - -		
C	100\%	80\%	yes
D	100\%	80\%	yes
F	95\% but only 30 days a year, otherwise 85\%	75\%	no
G	85\% but only 60 days a year, otherwise 75\%	65\%	no
J	50\%	50\%	no

FIIG Change List

FIIG Change List, Effective July 2, 2010

This change replaced with ISAC or and/or coding.